# hiv/aids

3rd Quarter '99

# quarterly epidemiology report

**Washington State ❍ Seattle & King County**

# Washington State/Seattle-King County HIV/AIDS Epidemiology Report

## Summary Tables



## HIV/AIDS Epidemiology and Surveillance News



*To be included on the mailing list or to request address corrections, write to the PH-SKC HIV/AIDS Epidemiology Program or phone (206)296-4645, or email steve.hitchcock@metrokc.gov. We provide alternative formats for printed material upon request for people with special needs.*

## Credits


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## *HIV/AIDS Reporting Requirements*

Effective September 1, 1999, health care providers in Washington State are required to report to the local health department by name all cases of HIV infection that have not been previously reported. As you may recall, symptomatic HIV infection and AIDS have been reportable by name for over a decade. To date, over 8,500 cases of AIDS have been reported in Washington State with 5,700 of these being residents of King County at the time of their diagnosis. Nearly 60 percent of persons reported with AIDS have died. Another 6,000-8,000 HIV-infected persons not yet reported are estimated to reside in the state of Washington. Of these approximately two-thirds are thought to be aware of their HIV status.

Expanding surveillance to include all cases of HIV infection is necessary to better understand the current dynamics of HIV transmission in Washington State in order to identify new populations at risk as the epidemiology of the disease changes with time, to better define the scope of the epidemic, and to design prevention programs and acquire necessary resources . At the individual level, HIV reporting enables public health officials to ensure that infected persons are aware of their status and have been offered appropriate services for medical care, partner notification, and prevention of subsequent transmission.

Health care providers are required to report all HIV infections, regardless of the date of the patient's initial diagnosis. However, the requirement is limited to those patients who seek care or are tested on or after September 1, 1999. Local health department officials will forward case reports to the State Department of Health, replacing the name of the patient with a standard code prior to forwarding if the report indicates asymptomatic infections. As has been the case since 1985, AIDS and symptomatic HIV case reports will not be subject to coding.

Laboratory evidence of HIV infection (i.e., western blot assays, p24 antigen detection, viral culture, nucleic acid detection [viral load]) also becomes reportable by laboratories effective September 1, 1999. Low CD4 counts (<200/µl or <14% of total lymphocytes) already have been reportable since 1993. However, that laboratory reporting does not relieve health care providers of their duty to report, because most of the critical information necessary for surveillance and follow-up are not provided by the lab report.

Data collected through HIV infection reporting will be included in this report by mid-2000. For further information about HIV/AIDS reporting requirements, please call your local health department or the Washington Department of Health at 1-888-367-5555. In King County contact the HIV/AIDS Epidemiology Program at 206-296-4645.

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## Table 1. Surveillance summary of reported AIDS[1] cases, deaths, and persons living with AIDS - King County, other WA counties, all WA State, U.S.

| | | ADULT/ ADOLESCENT | PEDIATRIC[2] | TOTAL |
|---|---|---|---|---|
| **KING COUNTY** | *Cases reported as of 9/30/99* | | | |
| | New cases reported this quarter | 47 | 0 | 47 |
| | New cases reported year-to-date | 162 | 0 | 162 |
| | Cumulative cases | 5,789 | 14 | 5,803 |
| | Cumulative deaths | 3,462 | 8 | 3,470 |
| | Persons living[3] | 2,327 | 6 | 2,333 |
| **OTHER COUNTIES** | *Cases reported as of 9/30/99* | | | |
| | New cases reported this quarter | 43 | 0 | 43 |
| | New cases reported year-to-date | 115 | 0 | 115 |
| | Cumulative cases | 3,047 | 17 | 3,064 |
| | Cumulative deaths | 1,714 | 10 | 1,724 |
| | Persons living[3] | 1,333 | 7 | 1,340 |
| **WA STATE** | *Cases reported as of 9/30/99* | | | |
| | New cases reported this quarter | 90 | 0 | 90 |
| | New cases reported year-to-date | 277 | 0 | 277 |
| | Cumulative cases | 8,836 | 31 | 8,867 |
| | Cumulative deaths | 5,176 | 18 | 5,194 |
| | Persons living[3] | 3,660 | 13 | 3,673 |
| **U.S.** | *Cases reported as of 6/30/99*[4] | | | |
| | Cumulative cases | 702,748 | 8,596 | 711,344 |
| | Cumulative deaths | 415,190 | 5,011 | 420,201 |
| | Persons living[3] | 287,558 | 3,585 | 291,143 |

[1]AIDS by 1993 surveillance case definition
[2]Age < 13 years at time of AIDS diagnosis
[3]Persons reported with AIDS and not known to have died
[4]Most recent date that complete U.S. statistics are available

## Table 2. Cumulative AIDS case counts and deaths by resident county and AIDSNet region at diagnosis - Reported as of 9/30/99 - WA State

| | | TOTAL CASES | | DEATHS | | PRESUMED LIVING | |
|---|---|---|---|---|---|---|---|
| | | No. | (%)[1] | No. | (%)[2] | No. | (%)[2] |
| **Region 1:** | Adams | 3 | ( 0.0) | 0 | ( 0) | 3 | (100) |
| | Asotin | 13 | ( 0.1) | 6 | ( 46) | 7 | ( 54) |
| | Columbia | 3 | ( 0.0) | 2 | ( 67) | 1 | ( 33) |
| | Ferry | 5 | ( 0.1) | 4 | ( 80) | 1 | ( 20) |
| | Garfield | 0 | ( 0.0) | 0 | ( 0) | 0 | ( 0) |
| | Lincoln | 2 | ( 0.0) | 2 | (100) | 0 | ( 0) |
| | Okanogan | 17 | ( 0.2) | 6 | ( 35) | 11 | ( 65) |
| | Pend Oreille | 8 | ( 0.1) | 4 | ( 50) | 4 | ( 50) |
| | Spokane | 350 | ( 3.9) | 203 | ( 58) | 147 | ( 42) |
| | Stevens | 14 | ( 0.2) | 6 | ( 43) | 8 | ( 57) |
| | Walla Walla | 48 | ( 0.5) | 26 | ( 54) | 22 | ( 46) |
| | Whitman | 7 | ( 0.1) | 4 | ( 57) | 3 | ( 43) |
| | **SUBTOTAL** | **470** | **( 5.3)** | **263** | **( 56)** | **207** | **( 44)** |
| **Region 2:** | Benton | 59 | ( 0.7) | 28 | ( 47) | 31 | ( 53) |
| | Chelan | 30 | ( 0.3) | 19 | ( 63) | 11 | ( 37) |
| | Douglas | 2 | ( 0.0) | 2 | (100) | 0 | ( 0) |
| | Franklin | 17 | ( 0.2) | 8 | ( 47) | 9 | ( 53) |
| | Grant | 24 | ( 0.3) | 18 | ( 75) | 6 | ( 25) |
| | Kittitas | 13 | ( 0.1) | 7 | ( 54) | 6 | ( 46) |
| | Yakima | 118 | ( 1.3) | 63 | ( 53) | 55 | ( 47) |
| | **SUBTOTAL** | **263** | **( 3.0)** | **145** | **( 55)** | **118** | **( 45)** |
| **Region 3:** | Island | 51 | ( 0.6) | 32 | ( 63) | 19 | ( 37) |
| | San Juan | 14 | ( 0.2) | 10 | ( 71) | 4 | ( 29) |
| | Skagit | 43 | ( 0.5) | 27 | ( 63) | 16 | ( 37) |
| | Snohomish | 460 | ( 5.2) | 259 | ( 56) | 201 | ( 44) |
| | Whatcom | 128 | ( 1.4) | 63 | ( 49) | 65 | ( 51) |
| | **SUBTOTAL** | **696** | **( 7.8)** | **391** | **( 56)** | **305** | **( 44)** |
| **Region 4:** | King | 5,803 | ( 65.4) | 3470 | ( 60) | 2,333 | ( 40) |
| **Region 5:** | Kitsap | 152 | ( 1.7) | 95 | ( 63) | 57 | ( 38) |
| | Pierce | 769 | ( 8.7) | 442 | ( 57) | 327 | ( 43) |
| | **SUBTOTAL** | **921** | **( 10.4)** | **537** | **( 58)** | **384** | **( 42)** |
| **Region 6:** | Clallam | 40 | ( 0.5) | 18 | ( 45) | 22 | ( 55) |
| | Clark | 306 | ( 3.5) | 176 | ( 58) | 130 | ( 42) |
| | Cowlitz | 74 | ( 0.8) | 41 | ( 55) | 33 | ( 45) |
| | Grays Harbor | 37 | ( 0.4) | 20 | ( 54) | 17 | ( 46) |
| | Jefferson | 21 | ( 0.2) | 11 | ( 52) | 10 | ( 48) |
| | Klickitat | 10 | ( 0.1) | 8 | ( 80) | 2 | ( 20) |
| | Lewis | 33 | ( 0.4) | 23 | ( 70) | 10 | ( 30) |
| | Mason | 54 | ( 0.6) | 13 | ( 24) | 41 | ( 76) |
| | Pacific | 11 | ( 0.1) | 8 | ( 73) | 3 | ( 27) |
| | Skamania | 7 | ( 0.1) | 5 | ( 71) | 2 | ( 29) |
| | Thurston | 123 | ( 1.4) | 65 | ( 53) | 58 | ( 47) |
| | Wahkiakum | 1 | ( 0.0) | 0 | ( 0) | 1 | (100) |
| | **SUBTOTAL** | **717** | **( 8.1)** | **388** | **( 54)** | **329** | **( 46)** |
| **TOTAL** | | **8,867** | **(100.0)** | **5,194** | **( 59)** | **3,673** | **( 41)** |

[1] Percent of Washington State cases ( column % )
[2] Percent of individual county's cases ( row % )

## Table 3. Demographic characteristics of cumulative reported AIDS[1] cases - King County, other WA counties, all WA State, U.S.

| | KING COUNTY | | OTHER COUNTIES | | ALL WA STATE | | TOTAL U.S. | |
|---|---|---|---|---|---|---|---|---|
| *Cases reported as of:* | 9/30/99 | | 9/30/99 | | 9/30/99 | | 6/30/99[2] | |
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| **SEX** | | | | | | | | |
| Male | 5,544 | (96) | 2,694 | (88) | 8,238 | (93) | 592,552 | (83) |
| Female | 259 | ( 4) | 370 | (12) | 629 | ( 7) | 118,789 | (17) |
| Unknown | 0 | ( 0) | 0 | (0) | 0 | (0) | 3 | (<1) |
| **AGE GROUP (YRS)** | | | | | | | | |
| < 13 | 14 | (<1) | 17 | ( 1) | 31 | (<1) | 8,596 | (1) |
| 13-19 | 10 | (<1) | 23 | ( 1) | 33 | (<1) | 3,564 | (<1) |
| 20-29 | 990 | (17) | 622 | (20) | 1,612 | (18) | 120,773 | (17) |
| 30-39 | 2,838 | (49) | 1,353 | (44) | 4,191 | (47) | 319,947 | (45) |
| 40-49 | 1,441 | (25) | 733 | (24) | 2,174 | (25) | 183,195 | (26) |
| 50-59 | 407 | ( 7) | 213 | ( 7) | 620 | ( 7) | 54,747 | (8) |
| > 59 | 103 | ( 2) | 103 | ( 3) | 206 | ( 2) | 20,519 | (3) |
| Unknown | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 3 | (<1) |
| **RACE/ETHNICITY** | | | | | | | | |
| White, not Hispanic | 4,687 | (81) | 2,464 | (80) | 7,151 | (81) | 311,377 | (44) |
| Black, not Hispanic | 580 | (10) | 265 | ( 9) | 845 | (10) | 262,317 | (37) |
| Hispanic | 340 | ( 6) | 224 | ( 7) | 564 | ( 6) | 129,555 | (18) |
| Asian/Pacific Islander | 112 | ( 2) | 41 | ( 1) | 153 | ( 2) | 5,133 | (1) |
| American Indian/AK Native | 84 | ( 1) | 70 | ( 2) | 154 | ( 2) | 2,034 | (<1) |
| Unknown | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 928 | (<1) |
| **HIV EXPOSURE CATEGORY** | | | | | | | | |
| Male-male sex | 4,417 | (76) | 1,728 | (56) | 6,145 | (69) | 334,073 | (47) |
| Injection drug use (IDU) | 316 | ( 5) | 454 | (15) | 770 | ( 9) | 179,228 | (25) |
| IDU & male-male sex | 594 | (10) | 301 | (10) | 895 | (10) | 45,266 | (6) |
| Heterosexual contact | 181 | ( 3) | 265 | ( 9) | 446 | ( 5) | 70,582 | (10) |
| Hemophilia | 29 | (<1) | 55 | ( 2) | 84 | ( 1) | 5,243 | (1) |
| Transfusion | 51 | ( 1) | 65 | ( 2) | 116 | ( 1) | 8,806 | (1) |
| Mother at risk/has HIV | 13 | (<1) | 14 | (<1) | 27 | (<1) | 7,828 | (1) |
| Undetermined/other[3] | 202 | ( 3) | 182 | ( 6) | 384 | ( 4) | 60,318 | (8) |
| **TOTAL CASES** | **5,803** | | **3,064** | | **8,867** | | **711,344** | |

[1] AIDS by 1993 surveillance case definition
[2] Most recent date that complete U.S. statistics are available
[3] Includes patients for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up), patients still under investigation, patients whose only risk was heterosexual contact where the risk of the sexual partner was undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined

## Table 4A. Cumulative AIDS[1] cases by gender, race/ethnicity, and HIV exposure category - Reported as of 9/30/99 - King County

| EXPOSURE CATEGORY | WHITE[2] No. | (%) | BLACK[2] No. | (%) | HISPANIC No. | (%) | ASIAN/PI[3] No. | (%) | AI/AN[4] No. | (%) | TOTAL No. | (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MALE** | | | | | | | | | | | | |
| Male-male sex | 3,753 | (83) | 298 | (59) | 239 | (73) | 86 | (83) | 41 | (57) | 4,417 | (80) |
| Injection drug use (IDU) | 128 | ( 3) | 73 | (14) | 30 | ( 9) | 3 | ( 3) | 7 | (10) | 241 | ( 4) |
| IDU & male-male sex | 493 | (11) | 51 | (10) | 27 | ( 8) | 4 | ( 4) | 19 | (26) | 594 | (11) |
| Heterosexual contact | 27 | ( 1) | 21 | ( 4) | 8 | ( 2) | 1 | ( 1) | 1 | ( 1) | 58 | ( 1) |
| Hemophilia | 27 | ( 1) | 1 | (<1) | 0 | ( 0) | 1 | ( 1) | 0 | ( 0) | 29 | ( 1) |
| Transfusion | 27 | ( 1) | 2 | (<1) | 2 | ( 1) | 1 | ( 1) | 1 | ( 1) | 33 | ( 1) |
| Mother at risk/has HIV | 3 | (<1) | 3 | ( 1) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 6 | (<1) |
| Undetermined/other | 80 | ( 2) | 55 | (11) | 20 | ( 6) | 8 | ( 8) | 3 | ( 4) | 166 | ( 3) |
| **MALE SUBTOTAL (row %)** | **4,538** | **(82)** | **504** | **( 9)** | **326** | **( 6)** | **104** | **( 2)** | **72** | **( 1)** | **5,544** | **(100)** |
| **FEMALE** | | | | | | | | | | | | |
| Injection drug use (IDU) | 39 | (26) | 27 | (36) | 1 | ( 7) | 0 | ( 0) | 8 | (67) | 75 | (29) |
| Heterosexual contact | 78 | (52) | 30 | (39) | 9 | (64) | 3 | (38) | 3 | (25) | 123 | (47) |
| Hemophilia | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) |
| Transfusion | 13 | ( 9) | 3 | ( 4) | 1 | ( 7) | 1 | (13) | 0 | ( 0) | 18 | ( 7) |
| Mother at risk/has HIV | 3 | ( 2) | 2 | ( 3) | 2 | (14) | 0 | ( 0) | 0 | ( 0) | 7 | ( 3) |
| Undetermined/other | 16 | (11) | 14 | (18) | 1 | ( 7) | 4 | (50) | 1 | ( 8) | 36 | (14) |
| **FEMALE SUBTOTAL (row %)** | **149** | **(58)** | **76** | **(29)** | **14** | **( 5)** | **8** | **( 3)** | **12** | **( 5)** | **259** | **(100)** |
| **TOTAL** | **4,687** | **(81)** | **580** | **(10)** | **340** | **( 6)** | **112** | **( 2)** | **84** | **( 1)** | **5,803** | **(100)** |

## Table 4B. Cumulative AIDS[1] cases by gender, race/ethnicity, and HIV exposure category - Reported as of 9/30/99 - WA State

| EXPOSURE CATEGORY | WHITE[2] No. | (%) | BLACK[2] No. | (%) | HISPANIC No. | (%) | ASIAN/PI[3] No. | (%) | AI/AN[4] No. | (%) | TOTAL No. | (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MALE** | | | | | | | | | | | | |
| Male-male sex | 5,247 | (78) | 394 | (56) | 328 | (64) | 109 | (81) | 67 | (51) | 6,145 | (75) |
| Injection drug use (IDU) | 361 | ( 5) | 120 | (17) | 68 | (13) | 4 | ( 3) | 21 | (16) | 574 | ( 7) |
| IDU & male-male sex | 746 | (11) | 69 | (10) | 44 | ( 9) | 4 | ( 3) | 32 | (24) | 895 | (11) |
| Heterosexual contact | 81 | ( 1) | 36 | ( 5) | 24 | ( 5) | 3 | ( 2) | 4 | ( 3) | 148 | ( 2) |
| Hemophilia | 78 | ( 1) | 1 | (<1) | 1 | (<1) | 1 | ( 1) | 0 | ( 0) | 81 | ( 1) |
| Transfusion | 60 | ( 1) | 3 | (<1) | 6 | ( 1) | 1 | ( 1) | 1 | ( 1) | 71 | ( 1) |
| Mother at risk/has HIV | 6 | (<1) | 5 | ( 1) | 0 | ( 0) | 0 | ( 0) | 1 | ( 1) | 12 | (<1) |
| Undetermined/other | 177 | ( 3) | 76 | (11) | 42 | ( 8) | 12 | ( 9) | 5 | ( 4) | 312 | ( 4) |
| **MALE SUBTOTAL (row %)** | **6,756** | **(82)** | **704** | **( 9)** | **513** | **( 6)** | **134** | **( 2)** | **131** | **( 2)** | **8,238** | **(100)** |
| **FEMALE** | | | | | | | | | | | | |
| Injection drug use (IDU) | 118 | (30) | 54 | (38) | 7 | (14) | 2 | (11) | 15 | (65) | 196 | (31) |
| Heterosexual contact | 203 | (51) | 53 | (38) | 30 | (59) | 7 | (37) | 5 | (22) | 298 | (47) |
| Hemophilia | 3 | ( 1) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 0 | ( 0) | 3 | (<1) |
| Transfusion | 31 | ( 8) | 6 | ( 4) | 3 | ( 6) | 3 | (16) | 2 | ( 9) | 45 | ( 7) |
| Mother at risk/has HIV | 6 | ( 2) | 4 | ( 3) | 4 | ( 8) | 1 | ( 5) | 0 | ( 0) | 15 | ( 2) |
| Undetermined/other | 34 | ( 9) | 24 | (17) | 7 | (14) | 6 | (32) | 1 | ( 4) | 72 | (11) |
| **FEMALE SUBTOTAL (row %)** | **395** | **(63)** | **141** | **(22)** | **51** | **( 8)** | **19** | **( 3)** | **23** | **( 4)** | **629** | **(100)** |
| **TOTAL** | **7,151** | **(81)** | **845** | **(10)** | **564** | **( 6)** | **153** | **( 2)** | **154** | **( 2)** | **8,867** | **(100)** |

[1]AIDS by 1993 surveillance case definition
[2]And not Hispanic
[3]Asian/Pacific Islander
[4]American Indian/Alaska Native

## Table 5. Cumulative AIDS[1] cases by gender and age at diagnosis Reported as of 9/30/99 - King County and WA State

| | KING COUNTY | | | | WASHINGTON STATE | | | |
|---|---|---|---|---|---|---|---|---|
| | MALE | | FEMALE | | MALE | | FEMALE | |
| AGE (YRS) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| < 5 | 5 | (<1) | 5 | ( 2) | 11 | (<1) | 12 | ( 2) |
| 5-12 | 2 | (<1) | 2 | ( 1) | 5 | (<1) | 3 | (<1) |
| 13-19 | 7 | (<1) | 3 | ( 1) | 23 | (<1) | 10 | ( 2) |
| 20-29 | 917 | (17) | 73 | (28) | 1,454 | (18) | 158 | (25) |
| 30-39 | 2,726 | (49) | 112 | (43) | 3,933 | (48) | 258 | (41) |
| 40-49 | 1,403 | (25) | 38 | (15) | 2,055 | (25) | 119 | (19) |
| 50-59 | 391 | ( 7) | 16 | ( 6) | 576 | ( 7) | 44 | ( 7) |
| > 59 | 93 | ( 2) | 10 | ( 4) | 181 | ( 2) | 25 | ( 4) |
| **TOTAL** | **5,544** | **(100)** | **259** | **(100)** | **8,238** | **(100)** | **629** | **(100)** |

[1] AIDS by 1993 surveillance case definition

## Table 6. AIDS[1] cases, deaths, and case-fatality rates by year Reported as of 9/30/99 - King County and WA State

| | KING COUNTY | | | | WASHINGTON STATE | | |
|---|---|---|---|---|---|---|---|
| YEAR OF DIAGNOSIS | CASES | (% TOTAL WA CASES) | DEATHS[2] | CASE-FATALITY RATE (%)[3] | CASES | DEATHS[2] | CASE-FATALITY RATE (%)[3] |
| 1982 | 1 | (100) | 1 | (100) | 1 | 1 | (100) |
| 1983 | 11 | (55) | 11 | (100) | 20 | 20 | (100) |
| 1984 | 60 | (76) | 57 | ( 95) | 79 | 76 | ( 96) |
| 1985 | 104 | (79) | 100 | ( 96) | 131 | 127 | ( 97) |
| 1986 | 186 | (75) | 177 | ( 95) | 249 | 240 | ( 96) |
| 1987 | 274 | (74) | 260 | ( 95) | 370 | 351 | ( 95) |
| 1988 | 352 | (71) | 323 | ( 92) | 496 | 458 | ( 92) |
| 1989 | 460 | (73) | 414 | ( 90) | 627 | 561 | ( 89) |
| 1990 | 519 | (69) | 446 | ( 86) | 756 | 657 | ( 87) |
| 1991 | 563 | (66) | 461 | ( 82) | 855 | 707 | ( 83) |
| 1992 | 621 | (67) | 425 | ( 68) | 924 | 654 | ( 71) |
| 1993 | 647 | (65) | 366 | ( 57) | 999 | 590 | ( 59) |
| 1994 | 540 | (61) | 229 | ( 42) | 888 | 386 | ( 43) |
| 1995 | 502 | (64) | 113 | ( 23) | 785 | 193 | ( 25) |
| 1996 | 408 | (59) | 38 | ( 9) | 696 | 79 | ( 11) |
| 1997 | 286 | (57) | 32 | ( 11) | 504 | 56 | ( 11) |
| 1998[4] | 219 | (60) | 15 | ( 7) | 368 | 29 | ( 8) |
| 1999[4] | 50 | (42) | 2 | ( 4) | 119 | 9 | ( 8) |
| **TOTAL** | **5,803** | | **3,470** | **( 60)** | **8,867** | **5,194** | **( 59)** |

[1]AIDS by 1993 surveillance case definition
[2]Number of deaths among persons diagnosed each year
[3]Percent of cases diagnosed in each year whose deaths have been reported to date
[4]Reporting for recent years is incomplete

## Table 7A. AIDS cases by HIV exposure category and year of diagnosis Reported as of 9/30/99 - King County

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Male-male sex | 354 | (71) | 282 | (69) | 180 | (63) | 136 | (62) | 29 | (58) |
| Injection drug use (IDU) | 47 | ( 9) | 35 | ( 9) | 14 | ( 5) | 22 | (10) | 4 | ( 8) |
| IDU & male-male sex | 45 | ( 9) | 30 | ( 7) | 32 | (11) | 22 | (10) | 6 | (12) |
| Heterosexual contact | 21 | ( 4) | 20 | ( 5) | 16 | ( 6) | 11 | ( 5) | 3 | ( 6) |
| Hemophilia | 1 | (<1) | 3 | ( 1) | 3 | ( 1) | 0 | ( 0) | 0 | ( 0) |
| Transfusion | 1 | (<1) | 0 | ( 0) | 3 | ( 1) | 2 | ( 1) | 0 | ( 0) |
| Mother at risk/has HIV | 1 | (<1) | 3 | ( 1) | 1 | (<1) | 0 | ( 0) | 0 | ( 0) |
| Undetermined/other[3] | 32 | ( 6) | 35 | ( 9) | 37 | (13) | 26 | (12) | 8 | (16) |

## Table 7B. AIDS cases by HIV exposure category and year of diagnosis Reported as of 9/30/99 - Other Counties

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Male-male sex | 136 | (48) | 143 | (50) | 97 | (44) | 67 | (45) | 24 | (35) |
| Injection drug use (IDU) | 54 | (19) | 49 | (17) | 38 | (17) | 29 | (19) | 22 | (32) |
| IDU & male-male sex | 19 | ( 7) | 28 | (10) | 17 | ( 8) | 11 | ( 7) | 6 | ( 9) |
| Heterosexual contact | 33 | (12) | 44 | (15) | 28 | (13) | 19 | (13) | 8 | (12) |
| Hemophilia | 6 | ( 2) | 2 | ( 1) | 4 | ( 2) | 0 | ( 0) | 1 | ( 1) |
| Transfusion | 6 | ( 2) | 4 | ( 1) | 4 | ( 2) | 1 | ( 1) | 1 | ( 1) |
| Mother at risk/has HIV | 3 | ( 1) | 1 | (<1) | 1 | (<1) | 0 | ( 0) | 0 | ( 0) |
| Undetermined/other[3] | 26 | ( 9) | 17 | ( 6) | 29 | (13) | 22 | (15) | 7 | (10) |

## Table 7C. AIDS cases by HIV exposure category and year of diagnosis Reported as of 9/30/99 - WA State

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Male-male sex | 490 | (62) | 425 | (61) | 277 | (55) | 203 | (55) | 53 | (45) |
| Injection drug use (IDU) | 101 | (13) | 84 | (12) | 52 | (10) | 51 | (14) | 26 | (22) |
| IDU & male-male sex | 64 | ( 8) | 58 | ( 8) | 49 | (10) | 33 | ( 9) | 12 | (10) |
| Heterosexual contact | 54 | ( 7) | 64 | ( 9) | 44 | ( 9) | 30 | ( 8) | 11 | ( 9) |
| Hemophilia | 7 | ( 1) | 5 | ( 1) | 7 | ( 1) | 0 | ( 0) | 1 | ( 1) |
| Transfusion | 7 | ( 1) | 4 | ( 1) | 7 | ( 1) | 3 | ( 1) | 1 | ( 1) |
| Mother at risk/has HIV | 4 | ( 1) | 4 | ( 1) | 2 | (<1) | 0 | ( 0) | 0 | ( 0) |
| Undetermined/other[3] | 58 | ( 7) | 52 | ( 7) | 66 | (13) | 48 | (13) | 15 | (13) |

[1]Reporting for recent years is incomplete

[2]Year to date (cases reported as of 9/30/99)

[3]Includes patients for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow-up), patients still under investigation, patients whose only risk was heterosexual contact where the risk of the sexual partner was undetermined, persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined

## Table 8A. AIDS cases by age/gender and year of diagnosis Reported as of 9/30/99 - King County

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Adult Male Cases | 467 | (93) | 378 | (93) | 262 | (92) | 198 | (90) | 47 | (94) |
| Adult Female Cases | 34 | ( 7) | 27 | ( 7) | 23 | ( 8) | 21 | (10) | 3 | ( 6) |
| Pediatric Cases | 1 | (<1) | 3 | ( 1) | 1 | (<1) | 0 | ( 0) | 0 | ( 0) |

## Table 8B. AIDS cases by age/gender and year of diagnosis Reported as of 9/30/99 - Other counties

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Adult Male Cases | 231 | (82) | 236 | (82) | 181 | (83) | 130 | (87) | 52 | (75) |
| Adult Female Cases | 49 | (17) | 51 | (18) | 36 | (17) | 19 | (13) | 17 | (25) |
| Pediatric Cases | 3 | ( 1) | 1 | (<1) | 1 | (<1) | 0 | ( 0) | 0 | ( 0) |

## Table 8C. AIDS cases by age/gender and year of diagnosis Reported as of 9/30/99 - WA State

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| Adult Male Cases | 698 | (89) | 614 | (88) | 443 | (88) | 328 | (89) | 99 | (83) |
| Adult Female Cases | 83 | (11) | 78 | (11) | 59 | (12) | 40 | (11) | 20 | (17) |
| Pediatric Cases | 4 | ( 1) | 4 | ( 1) | 2 | (<1) | 0 | ( 0) | 0 | ( 0) |

[1] Reporting for years is incomplete
[2] Year to date (cases reported as of 9/30/99)

## Table 9. Deaths of reported AIDS cases by year of death Reported as of 9/30/99 - King County, Other counties, WA State

| | 1995 | | 1996 | | 1997 | | 1998[1] | | 1999[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) | No. | (%) | No. | (%) |
| King County | 439 | (67) | 281 | (61) | 102 | (48) | 87 | (60) | 28 | (58) |
| Other Counties | 214 | (33) | 179 | (39) | 109 | (52) | 58 | (40) | 20 | (42) |
| All WA State | 653 | (100) | 460 | (100) | 211 | (100) | 145 | (100) | 48 | (100) |

[1] Reporting for recent years is incomplete
[2] Year to date (deaths reported as of 9/30/99)

## Table 10. Estimated number of persons living with AIDS at year's end King County, Other counties, WA State

| | 1996 | | 1997[1,2] | | 1998[1,2] | |
|---|---|---|---|---|---|---|
| | No. | (%) | No. | (%) | No. | (%) |
| King County | 2,027 | (64) | 2,251 | (64) | 2,406 | (62) |
| Other Counties | 1,142 | (36) | 1,290 | (36) | 1,468 | (38) |
| All WA State | 3,169 | (100) | 3,451 | (100) | 3,874 | (100) |

[1]AIDS cases numbers adjusted for reporting delay through 1998
[2]AIDS deaths for 1997 and 1998 have not been adjusted for reporting delay and therefore may be incomplete

## AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through December 1998, United States[1]

| Metropolitan area of residence (with 500,000 or more population) | 1997 | | 1998 | | Cumulative totals | | |
|---|---|---|---|---|---|---|---|
| | No. | Rate | No. | Rate | Adults/ adolescents | Children <13 years old | Total |
| Akron, Ohio | 77 | 11.2 | 54 | 7.8 | 504 | 1 | 505 |
| Albany-Schenectady, N.Y. | 218 | 24.9 | 118 | 13.5 | 1,541 | 24 | 1,565 |
| Albuquerque, N.Mex. | 102 | 15.1 | 88 | 13.0 | 986 | 2 | 988 |
| Allentown, Pa. | 61 | 9.9 | 39 | 6.3 | 700 | 8 | 708 |
| Ann Arbor, Mich. | 25 | 4.6 | 20 | 3.7 | 340 | 9 | 349 |
| Atlanta, Ga. | 1,168 | 32.1 | 941 | 25.1 | 14,116 | 101 | 14,217 |
| Austin, Tex. | 246 | 23.0 | 294 | 26.6 | 3,427 | 22 | 3,449 |
| Bakersfield, Calif. | 68 | 10.9 | 86 | 13.6 | 871 | 5 | 876 |
| Baltimore, Md. | 1,271 | 51.3 | 1,162 | 46.8 | 12,333 | 200 | 12,533 |
| Baton Rouge, La. | 196 | 34.4 | 184 | 32.0 | 1,560 | 19 | 1,579 |
| Bergen-Passaic, N.J. | 427 | 32.0 | 287 | 21.3 | 4,939 | 75 | 5,014 |
| Birmingham, Ala. | 174 | 19.3 | 140 | 15.4 | 1,635 | 22 | 1,657 |
| Boston, Mass. | 755 | 13.0 | 828 | 14.1 | 12,057 | 174 | 12,231 |
| Buffalo, N.Y. | 407 | 35.0 | 115 | 10.0 | 1,555 | 18 | 1,573 |
| Charleston, S.C. | 114 | 21.3 | 113 | 20.9 | 1,321 | 11 | 1,332 |
| Charlotte, N.C. | 145 | 10.7 | 193 | 14.0 | 1,813 | 22 | 1,835 |
| Chicago, Ill. | 1,560 | 19.8 | 1,111 | 14.0 | 18,561 | 215 | 18,776 |
| Cincinnati, Ohio | 184 | 11.4 | 101 | 6.2 | 1,770 | 14 | 1,784 |
| Cleveland, Ohio | 259 | 11.6 | 241 | 10.8 | 2,984 | 40 | 3,024 |
| Columbia, S.C. | 153 | 30.3 | 155 | 30.3 | 1,588 | 16 | 1,604 |
| Columbus, Ohio | 124 | 8.5 | 102 | 6.9 | 2,020 | 12 | 2,032 |
| Dallas, Tex. | 922 | 29.5 | 654 | 20.4 | 11,116 | 37 | 11,153 |
| Dayton, Ohio | 63 | 6.6 | 55 | 5.8 | 887 | 17 | 904 |
| Denver, Colo. | 292 | 15.4 | 235 | 12.1 | 5,137 | 19 | 5,156 |
| Detroit, Mich. | 553 | 12.4 | 488 | 10.9 | 6,810 | 72 | 6,882 |
| El Paso, Tex. | 131 | 19.0 | 121 | 17.2 | 905 | 10 | 915 |
| Fort Lauderdale, Fla. | 1,004 | 68.2 | 836 | 55.6 | 10,957 | 233 | 11,190 |
| Fort Worth, Tex. | 319 | 20.5 | 220 | 13.8 | 2,924 | 25 | 2,949 |
| Fresno, Calif. | 61 | 7.1 | 63 | 7.2 | 1,043 | 13 | 1,056 |
| Gary, Ind. | 72 | 11.6 | 50 | 8.0 | 627 | 3 | 630 |
| Grand Rapids, Mich. | 63 | 6.1 | 49 | 4.7 | 691 | 3 | 694 |
| Greensboro, N.C. | 88 | 7.6 | 111 | 9.5 | 1,400 | 19 | 1,419 |
| Greenville, S.C. | 107 | 11.8 | 125 | 13.6 | 1,250 | 3 | 1,253 |
| Harrisburg, Pa. | 125 | 20.3 | 118 | 19.2 | 874 | 6 | 880 |
| Hartford, Conn. | 470 | 42.5 | 252 | 22.7 | 3,569 | 46 | 3,615 |
| Honolulu, Hawaii | 76 | 8.7 | 106 | 12.1 | 1,627 | 12 | 1,639 |
| Houston, Tex. | 1,767 | 45.9 | 1,564 | 39.8 | 17,436 | 149 | 17,585 |
| Indianapolis, Ind. | 223 | 14.8 | 219 | 14.4 | 2,553 | 14 | 2,567 |
| Jacksonville, Fla. | 342 | 33.2 | 266 | 25.5 | 3,853 | 67 | 3,920 |
| Jersey City, N.J. | 510 | 92.0 | 328 | 58.9 | 6,019 | 117 | 6,136 |
| Kansas City, Mo. | 209 | 12.2 | 177 | 10.2 | 3,565 | 13 | 3,578 |
| Knoxville, Tenn. | 58 | 8.9 | 75 | 11.4 | 634 | 6 | 640 |
| Las Vegas, Nev. | 528 | 41.8 | 228 | 17.3 | 3,148 | 25 | 3,173 |
| Little Rock, Ark. | 98 | 17.7 | 67 | 12.0 | 935 | 14 | 949 |
| Los Angeles, Calif. | 2,586 | 28.4 | 1,851 | 20.1 | 38,440 | 230 | 38,670 |
| Louisville, Ky. | 185 | 18.6 | 169 | 16.9 | 1,382 | 14 | 1,396 |
| McAllen, Tex. | 29 | 5.7 | 50 | 9.6 | 301 | 9 | 310 |
| Memphis, Tenn. | 277 | 25.6 | 285 | 26.1 | 2,516 | 15 | 2,531 |
| Miami, Fla. | 1,666 | 78.3 | 1,577 | 73.3 | 21,039 | 463 | 21,502 |
| Middlesex, N.J. | 220 | 19.9 | 152 | 13.6 | 2,892 | 67 | 2,959 |
| Milwaukee, Wis. | 156 | 10.7 | 115 | 7.9 | 1,750 | 16 | 1,766 |
| Minneapolis-Saint Paul, Minn. | 181 | 6.5 | 174 | 6.1 | 2,989 | 17 | 3,006 |
| Mobile, Ala. | 103 | 19.5 | 88 | 16.5 | 1,005 | 12 | 1,017 |
| Monmouth-Ocean, N.J. | 197 | 18.3 | 126 | 11.5 | 2,582 | 60 | 2,642 |
| Nashville, Tenn. | 281 | 24.7 | 189 | 16.3 | 2,172 | 16 | 2,188 |
| Nassau-Suffolk, N.Y. | 551 | 20.7 | 429 | 16.0 | 6,014 | 107 | 6,121 |
| New Haven, Conn. | 666 | 41.0 | 360 | 22.1 | 5,812 | 121 | 5,933 |
| New Orleans, La. | 562 | 43.0 | 457 | 34.9 | 6,158 | 61 | 6,219 |
| New York, N.Y. | 9,865 | 114.0 | 7,469 | 85.9 | 107,097 | 1,953 | 109,050 |
| Newark, N.J. | 1,358 | 69.9 | 879 | 45.0 | 15,120 | 306 | 15,426 |

## AIDS cases and annual rates per 100,000 population, by metropolitan area and age group, reported through December 1998, United States (continued)

| Metropolitan area of residence (with 500,000 or more population) | 1997 | | 1998 | | Cumulative totals | | |
|---|---|---|---|---|---|---|---|
| | No. | Rate | No. | Rate | Adults/ adolescents | Children <13 years old | Total |
| Norfolk, Va. | 410 | 26.5 | 346 | 22.4 | 3,200 | 58 | 3,258 |
| Oakland, Calif. | 475 | 20.9 | 417 | 18.0 | 7,406 | 41 | 7,447 |
| Oklahoma City, Okla. | 141 | 13.7 | 146 | 14.1 | 1,530 | 8 | 1,538 |
| Omaha, Nebr. | 65 | 9.5 | 42 | 6.1 | 659 | 3 | 662 |
| Orange County, Calif. | 269 | 10.1 | 342 | 12.6 | 5,085 | 31 | 5,116 |
| Orlando, Fla. | 535 | 36.6 | 483 | 32.1 | 5,165 | 75 | 5,240 |
| Philadelphia, Pa. | 1,495 | 30.3 | 1,311 | 26.5 | 15,888 | 235 | 16,123 |
| Phoenix, Ariz. | 277 | 9.7 | 469 | 16.0 | 4,308 | 13 | 4,321 |
| Pittsburgh, Pa. | 141 | 6.0 | 121 | 5.2 | 2,162 | 16 | 2,178 |
| Portland, Oreg. | 239 | 13.4 | 157 | 8.6 | 3,536 | 8 | 3,544 |
| Providence, R.I. | 143 | 15.8 | 123 | 13.6 | 1,728 | 19 | 1,747 |
| Raleigh-Durham, N.C. | 146 | 13.9 | 124 | 11.5 | 1,713 | 21 | 1,734 |
| Richmond, Va. | 220 | 23.2 | 207 | 21.6 | 2,242 | 25 | 2,267 |
| Riverside-San Bernardino, Calif. | 443 | 14.5 | 494 | 15.9 | 6,148 | 51 | 6,199 |
| Rochester, N.Y. | 364 | 33.6 | 121 | 11.2 | 2,071 | 13 | 2,084 |
| Sacramento, Calif. | 209 | 13.9 | 183 | 11.9 | 2,907 | 24 | 2,931 |
| Saint Louis, Mo. | 314 | 12.3 | 200 | 7.8 | 4,138 | 37 | 4,175 |
| Salt Lake City, Utah | 124 | 9.9 | 114 | 9.0 | 1,438 | 14 | 1,452 |
| San Antonio, Tex. | 301 | 20.0 | 268 | 17.4 | 3,575 | 28 | 3,603 |
| San Diego, Calif. | 798 | 29.3 | 538 | 19.3 | 9,591 | 52 | 9,643 |
| San Francisco, Calif. | 1,286 | 77.0 | 970 | 57.6 | 26,295 | 37 | 26,332 |
| San Jose, Calif. | 206 | 12.7 | 149 | 9.1 | 2,870 | 13 | 2,883 |
| San Juan, P.R. | 1,321 | 66.3 | 1,066 | 53.1 | 13,758 | 238 | 13,996 |
| Sarasota, Fla. | 107 | 20.0 | 74 | 13.6 | 1,224 | 21 | 1,245 |
| Scranton, Pa. | 39 | 6.3 | 42 | 6.8 | 400 | 4 | 404 |
| Seattle, Wash. | 368 | 16.1 | 280 | 12.1 | 6,140 | 19 | 6,159 |
| Springfield, Mass. | 94 | 15.9 | 98 | 16.6 | 1,421 | 24 | 1,445 |
| Stockton, Calif. | 55 | 10.2 | 49 | 8.9 | 660 | 13 | 673 |
| Syracuse, N.Y. | 221 | 29.9 | 64 | 8.7 | 1,126 | 9 | 1,135 |
| Tacoma, Wash. | 72 | 10.8 | 53 | 7.8 | 727 | 8 | 735 |
| Tampa-Saint Petersburg, Fla. | 595 | 26.7 | 549 | 24.3 | 7,358 | 96 | 7,454 |
| Toledo, Ohio | 43 | 7.0 | 23 | 3.8 | 515 | 10 | 525 |
| Tucson, Ariz. | 120 | 15.4 | 122 | 15.4 | 1,316 | 6 | 1,322 |
| Tulsa, Okla. | 84 | 11.0 | 75 | 9.7 | 988 | 8 | 996 |
| Ventura, Calif. | 45 | 6.2 | 45 | 6.1 | 728 | 3 | 731 |
| Washington, D.C. | 1,770 | 38.4 | 1,594 | 34.1 | 19,845 | 276 | 20,121 |
| West Palm Beach, Fla. | 618 | 61.0 | 538 | 52.1 | 6,489 | 193 | 6,682 |
| Wichita, Kans. | 55 | 10.3 | 41 | 7.5 | 621 | 2 | 623 |
| Wilmington, Del. | 194 | 34.7 | 127 | 22.5 | 1,721 | 12 | 1,733 |
| Youngstown, Ohio | 23 | 3.9 | 30 | 5.1 | 304 | — | 304 |
| **Metropolitan areas with 500,000 or more population** | **49,123** | **29.1** | **39,344** | **23.0** | **570,846** | **7,164** | **578,010** |
| ***Central counties*** | ***47,835*** | ***31.1*** | ***38,337*** | ***24.7*** | ***559,683*** | ***7,037*** | ***566,720*** |
| ***Outlying counties*** | ***1,288*** | ***8.5*** | ***1,007*** | ***6.5*** | ***11,163*** | ***127*** | ***11,290*** |
| **Metropolitan areas with 50,000 to 500,000 population** | **6,325** | **13.1** | **5,007** | **10.3** | **66,286** | **790** | **67,076** |
| ***Central counties*** | ***5,910*** | ***13.8*** | ***4,636*** | ***10.7*** | ***62,006*** | ***722*** | ***62,728*** |
| ***Outlying counties*** | ***415*** | ***7.5*** | ***371*** | ***6.7*** | ***4,280*** | ***68*** | ***4,348*** |
| **Nonmetropolitan areas** | **4,368** | **8.0** | **3,465** | **6.3** | **39,373** | **483** | **39,856** |
| **Total[1]** | **60,270** | **22.1** | **48,269** | **17.6** | **679,739** | **8,461** | **688,200** |

[1]Totals include 3,258 persons whose area of residence is unknown.

**Source:** CDC. **HIV/AIDS Surveillance Report**, 1999; 11 (No.1): 5-6.

## AIDS cases and annual rates per 100,000 population, by state and age group, reported through December 1998, United States

| State of residence | 1997 | | 1998 | | Cumulative totals | | |
|---|---|---|---|---|---|---|---|
| | No. | Rate | No. | Rate | Adults/ adolescents | Children <13 years old | Total |
| Alabama | 568 | 13.1 | 484 | 11.1 | 5,251 | 67 | 5,318 |
| Alaska | 51 | 8.4 | 29 | 4.7 | 435 | 5 | 440 |
| Arizona | 446 | 9.8 | 645 | 13.8 | 6,090 | 21 | 6,111 |
| Arkansas | 242 | 9.6 | 203 | 8.0 | 2,553 | 38 | 2,591 |
| California | 6,958 | 21.6 | 5,654 | 17.3 | 109,481 | 575 | 110,056 |
| Colorado | 380 | 9.8 | 314 | 7.9 | 6,416 | 28 | 6,444 |
| Connecticut | 1,221 | 37.4 | 666 | 20.3 | 10,231 | 173 | 10,404 |
| Delaware | 230 | 31.3 | 174 | 23.4 | 2,163 | 18 | 2,181 |
| District of Columbia | 997 | 188.2 | 989 | 189.1 | 11,228 | 166 | 11,394 |
| Florida | 6,051 | 41.2 | 5,448 | 36.5 | 68,939 | 1,337 | 70,276 |
| Georgia | 1,719 | 23.0 | 1,295 | 16.9 | 19,816 | 191 | 20,007 |
| Hawaii | 95 | 8.0 | 161 | 13.5 | 2,234 | 15 | 2,249 |
| Idaho | 52 | 4.3 | 32 | 2.6 | 447 | 2 | 449 |
| Illinois | 1,833 | 15.3 | 1,304 | 10.8 | 21,442 | 242 | 21,684 |
| Indiana | 519 | 8.8 | 484 | 8.2 | 5,382 | 37 | 5,419 |
| Iowa | 100 | 3.5 | 75 | 2.6 | 1,138 | 9 | 1,147 |
| Kansas | 159 | 6.1 | 126 | 4.8 | 2,082 | 11 | 2,093 |
| Kentucky | 362 | 9.3 | 280 | 7.1 | 2,839 | 22 | 2,861 |
| Louisiana | 1,090 | 25.0 | 951 | 21.8 | 11,018 | 118 | 11,136 |
| Maine | 51 | 4.1 | 31 | 2.5 | 827 | 9 | 836 |
| Maryland | 1,851 | 36.3 | 1,639 | 31.9 | 18,430 | 286 | 18,716 |
| Massachusetts | 850 | 13.9 | 924 | 15.0 | 13,610 | 199 | 13,809 |
| Michigan | 880 | 9.0 | 714 | 7.3 | 9,865 | 104 | 9,969 |
| Minnesota | 211 | 4.5 | 190 | 4.0 | 3,372 | 22 | 3,394 |
| Mississippi | 345 | 12.6 | 415 | 15.1 | 3,562 | 53 | 3,615 |
| Missouri | 569 | 10.5 | 443 | 8.1 | 8,190 | 55 | 8,245 |
| Montana | 41 | 4.7 | 29 | 3.3 | 294 | 3 | 297 |
| Nebraska | 91 | 5.5 | 72 | 4.3 | 942 | 9 | 951 |
| Nevada | 588 | 35.0 | 258 | 14.8 | 3,875 | 26 | 3,901 |
| New Hampshire | 55 | 4.7 | 42 | 3.5 | 801 | 8 | 809 |
| New Jersey | 3,235 | 40.1 | 2,134 | 26.3 | 37,517 | 713 | 38,230 |
| New Mexico | 168 | 9.7 | 209 | 12.0 | 1,812 | 8 | 1,820 |
| New York | 13,117 | 72.3 | 8,714 | 47.9 | 126,495 | 2,180 | 128,675 |
| North Carolina | 850 | 11.4 | 788 | 10.4 | 8,838 | 110 | 8,948 |
| North Dakota | 12 | 1.9 | 6 | 0.9 | 96 | — | 96 |
| Ohio | 851 | 7.6 | 685 | 6.1 | 10,138 | 117 | 10,255 |
| Oklahoma | 282 | 8.5 | 285 | 8.5 | 3,274 | 26 | 3,300 |
| Oregon | 303 | 9.3 | 204 | 6.2 | 4,349 | 16 | 4,365 |
| Pennsylvania | 1,910 | 15.9 | 1,740 | 14.5 | 20,755 | 285 | 21,040 |
| Rhode Island | 152 | 15.4 | 128 | 12.9 | 1,839 | 20 | 1,859 |
| South Carolina | 770 | 20.3 | 777 | 20.3 | 7,692 | 75 | 7,767 |
| South Dakota | 11 | 1.5 | 15 | 2.0 | 140 | 4 | 144 |
| Tennessee | 775 | 14.4 | 695 | 12.8 | 6,940 | 48 | 6,988 |
| Texas | 4,672 | 24.1 | 3,967 | 20.1 | 47,994 | 356 | 48,350 |
| Utah | 152 | 7.4 | 139 | 6.6 | 1,651 | 21 | 1,672 |
| Vermont | 29 | 4.9 | 20 | 3.4 | 344 | 4 | 348 |
| Virginia | 1,175 | 17.4 | 998 | 14.7 | 11,110 | 159 | 11,269 |
| Washington | 634 | 11.3 | 441 | 7.8 | 8,618 | 33 | 8,651 |
| West Virginia | 126 | 6.9 | 86 | 4.7 | 945 | 8 | 953 |
| Wisconsin | 254 | 4.9 | 203 | 3.9 | 3,204 | 26 | 3,230 |
| Wyoming | 16 | 3.3 | 6 | 1.2 | 157 | 2 | 159 |
| **Subtotal** | **58,099** | **21.7** | **46,311** | **17.1** | **656,861** | **8,060** | **664,921** |
| **U.S. dependencies, possessions, and associated nations** | | | | | | | |
| Guam | 2 | 1.4 | 2 | 1.3 | 21 | — | 21 |
| Pacific Islands, U.S. | 1 | 0.3 | — | — | 4 | — | 4 |
| Puerto Rico | 2,037 | 53.2 | 1,711 | 44.3 | 21,915 | 382 | 22,297 |
| Virgin Islands, U.S. | 98 | 83.8 | 35 | 29.6 | 396 | 15 | 411 |
| **Total[1]** | **60,270** | **22.1** | **48,269** | **17.6** | **679,739** | **8,461** | **688,200** |

[1]U.S. totals presented in this report include data from the United States (50 states and the District of Columbia), and from U.S. dependencies, possessions, and independent nations in free association with the United States. See Technical Notes. Totals include 546 persons whose state of residence is unknown.

**Source:** CDC. **HIV/AIDS Surveillance Report,** 1999; 11(No.1): 7.

**Figure 1. Male adult/adolescent annual AIDS rates per 100,000 population, for cases reported in 1998, United States**

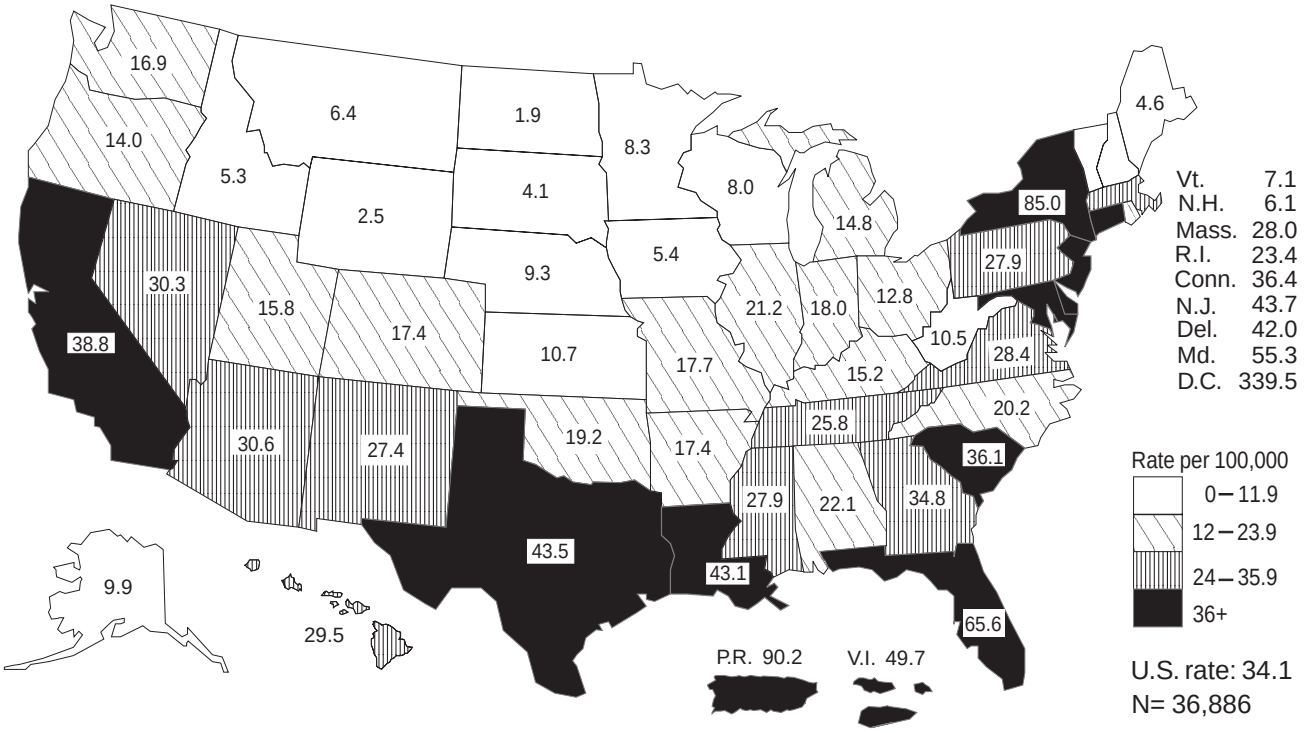
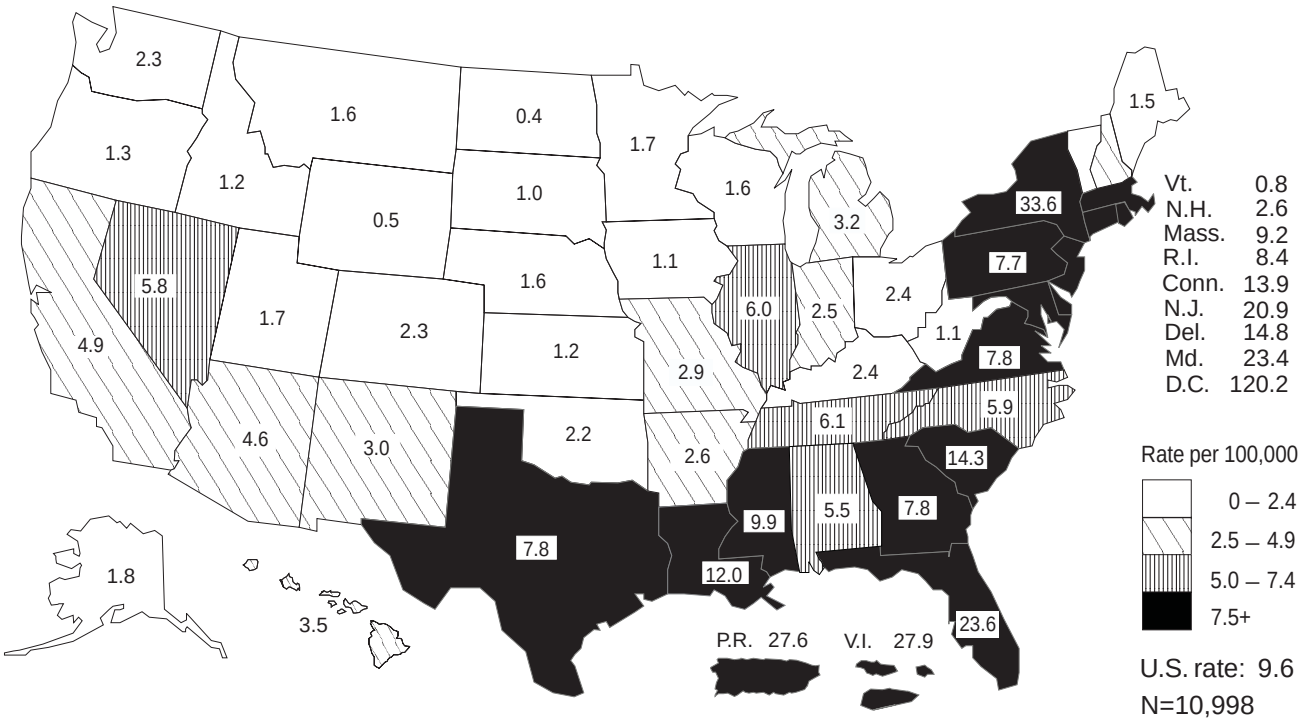



**Figure 2. Female adult/adolescent annual AIDS rates per 100,000 population, for cases reported in 1998, United States**



# Epidemiological Profile of AIDS in Washington State Residents Living Outside Seattle-King County

Acquired immunodeficiency syndrome (AIDS) is a specific group of diseases and conditions indicative of severe immunosupression related to the human immunodeficiency virus (HIV) infection. In Washington State, the AIDS epidemic historically has predominantly affected White individuals 30 to 49 years of age and men who have sex with men (MSM). The majority of the cases are reported to be living in the Seattle-King County (S-KC) area, but the proportion of AIDS cases living outside S-KC is increasing. Recent trends also show a rise in the proportion of females and racial/ethnic minorities affected, as well as an increase in the proportion of cases attributed to injection drug use (IDU) and to heterosexual contact.

## Methods

The results of this report are based on AIDS cases diagnosed in Washington and reported to the Department of Health through June 30, 1999. The AIDS cases in this report include those meeting the 1993 revision of the AIDS surveillance case definition as well as earlier versions. Cases were categorized as S-KC or non-King County and by AIDS Service Network (AIDSNET) Region, according to the county of residence at AIDS diagnosis. King County comprises Region 4; for the other AIDSNET regions, the most populous counties are Spokane (Region 1), Yakima (Region 2), Snohomish (Region 3), Pierce (Region 5), and Clark (Region 6). Patients diagnosed in 1998 and the first half of 1999 may not have been reported in time for this summary; therefore, absolute numbers of cases diagnosed should be considered provisional.

## The Impact of AIDS in Washington

Figure 1 illustrates the epidemic curve of reported AIDS cases for the years 1982 to 1997 for Seattle-King County (SK-C) and the rest of the state. The greatest number of cases was diagnosed in 1993 with the annual AIDS incidence decreasing since that time. In 1993, the AIDS case definition was expanded by the Centers for Disease Control and Prevention (CDC) to include not only HIV positive individuals with an opportunistic infection, but also asymptomatic infection with laboratory evidence of severe immunodeficiency. As a result, persons were reported earlier in the course of their disease, a phenomenon that contributed to an apparent peak in AIDS incidence. The 1993 peak in case numbers and the subsequent decline since then likely relates to several factors; the 1993 case definition change; the use of improved antiretroviral therapies forestalling the development of AIDS

**Figure 1. Number of Reported AIDS Cases by Year of Diagnosis, King County and non-King County, 1982-97**

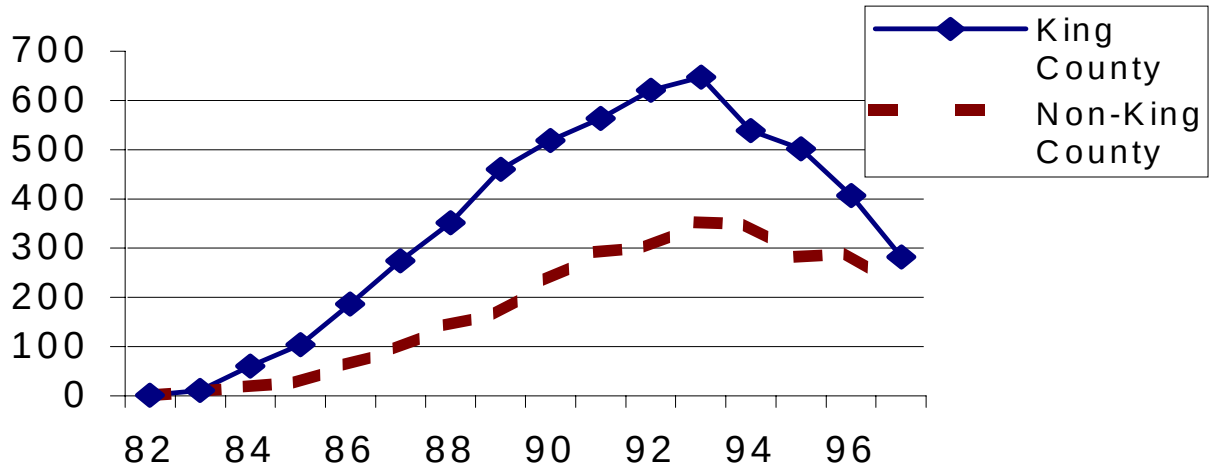
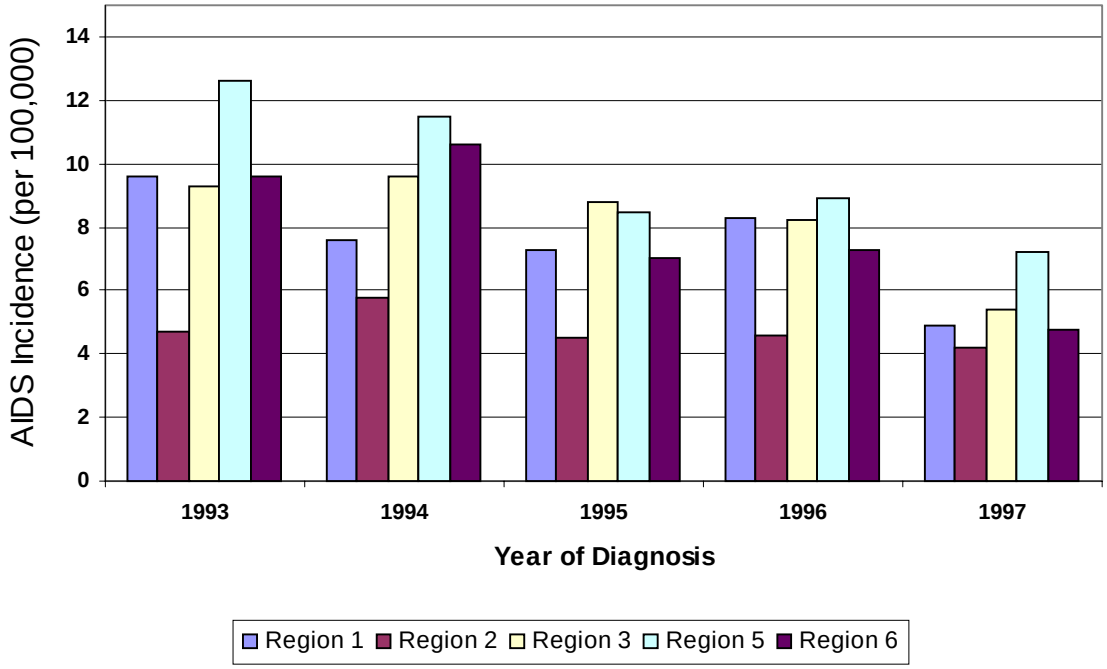


**Figure 2. Incidence of AIDS per 100,000 population by AIDSNET Region of residence at time of diagnosis and year of diagnosis, 1993-97**




among persons with HIV infection; and earlier reductions in HIV transmission rates due to behavioral changes among populations receiving HIV prevention messages.

Cumulatively through June 1999, 8793 AIDS cases had been reported to the Washington State Department of Health. In 1997, Washington ranked 20th among states including the District of Columbia in the number of AIDS cases reported that year to the CDC, and ranked 23rd among states for the rate of AIDS cases.[1] The 497 Washington AIDS cases diagnosed in 1997 represented a 29% decrease from the number of cases diagnosed in 1996. The annual incidence of AIDS in Washington State per 100,000 population declined from 19.1 in 1993 to 8.9 in 1997. Of all AIDS cases reported since 1982, 58% are known to have died. Like AIDS case numbers, deaths due to AIDS have also declined in recent years. In 1996, 454 deaths of diagnosed AIDS cases were reported while in 1997, 208 deaths were reported, representing a 54% decrease.

As of June 30, 1999, there were a total of 8,793 persons reported with AIDS statewide and, of these, 3,663 (42%) were presumed living (i.e., not known to have died). Of the 3,032 persons who lived outside King County at the time of diagnosis, 1,355 (45%) were presumed living. Within King County, 2,309 (40%) of the 5,761 cases were presumed living (Table 1). At the peak in 1993, 65% of cases diagnosed that year were reported among S-KC residents and 35% were from outside S-KC. In 1997, 57% of reported cases were diagnosed in S-KC, while the proportion of cases diagnosed outside S-KC had increased to 43% (see Table 6 on page 5).

## Trends by Geographic Region

Trends in persons developing AIDS may also be assessed geographically. The trends presented are based on AIDSNET region of residence at time of diagnosis. Figure 2 shows the trends for the AIDSNET regions excluding Region 4 (King County) per 100,000 population. All regions saw a decrease in the number of cases diagnosed from 1996 to 1997 with Region 1 experiencing the greatest decrease (38%) and Region 2 the smallest decrease (7%). Of cases diagnosed since 1993 outside King

County, the highest number were from Region 5 with 497 cases (12%) followed by Region 6 with 395 cases (9%) and Region 3 with 389 cases (9%) (Table 2). Between 1996 and 1997, AIDS cases in Regions 2 and 5 made up increasing proportions of state AIDS cases. Region 2 cases were 4% of 1996 state AIDS cases and 5% of 1997 cases, while Region 5 cases made up 11% of 1996 state AIDS cases and 13% of 1997 cases. ***Note:*** *Geographic data should be interpreted with caution since a person's county of residence at the time of AIDS diagnosis may not necessarily represent where they acquired HIV infection.*

Region 5 had the highest proportion of female cases diagnosed since 1993 with 20% of their total cases being women. Other regions with high proportions of female AIDS cases include Region 2 (16%) and Region 3 (16%). In comparison, only 6% of S-KC cases since 1993 were among women. (Table 2).

The proportion of non-Hispanic black cases ranged from 5% in Regions 2 and 3 to 21% in Region 5. Region 2 had the highest proportion of Hispanic cases (31%). In all regions, the majority of the AIDS cases were diagnosed between 30-39 years of age. Region 2 had a higher proportion of 20-29 year old cases (27%), while the proportion of cases in the 40-49 year old age group was higher in the other regions. (Table 2).

MSM continues to be the major exposure category for all the regions outside S-KC, although the proportion of cases is decreasing. Compared to other regions since 1993, in Region 2 a higher proportion (16%) of AIDS cases were contracted through heterosexual contact and in Region 5 a greater percentage (23%) were due to injection drug use (IDU)(Table 2). The proportion of AIDS cases with undetermined exposure mode ranged from 5% in Region 6 to 11% in Region 3 (Table 2).

## Trends by Demographic Characteristics

***Gender:*** Of the 497 AIDS cases diagnosed in 1997, males made up the majority (88%) while females comprised 12%. Trends show that the number of male cases has declined by 53% from a peak of 922 cases in 1993. From 1996 to 1997, the incidence of AIDS outside King County dropped for males compared to females (12.2/100,000 vs. 9.1/100,000, respectively). While the proportion of male cases has been declining, the percent of cases in women has been steadily increasing. In 1986, women comprised only 2% of all cases diagnosed whereas in 1997, 12% were female.

***Race/Ethnicity:*** The majority of cumulative AIDS cases reported in Washington State have been diagnosed in whites, both in S-KC (81%) and outside S-KC (81%) (Table 1). While the proportion of white cases has dropped somewhat, they continue to represent the majority of cases in more recent time periods with 76% S-KC and 77% non-S-KC diagnosed since 1993 being among white individuals (Table 2).

Among persons of color, AIDS case numbers were higher in non-Hispanic blacks than in other racial/ethnic groups. Non-Hispanic blacks and Hispanics accounted for 13% and 10%, respectively, of all persons diagnosed with AIDS in Washington in1997, the highest proportions thus far in the epidemic.

All race/ethnicity groups experienced a decline in the number of cases diagnosed between 1996 and 1997 with the greatest decline in Asian/Pacific Islanders (41%) and the smallest decline in American Indian/Alaska Natives (5%). Non-Hispanic Blacks had the greatest increase in the proportion of cases from 1996 to 1997 (11% vs. 13%, respectively) although all minority groups except Asian/Pacific Islanders saw a proportional increase in cases compared to whites in 1997.

***Age:*** Historically, the majority of AIDS cases in the state have been in the 30-39 years age group. However, the number of state AIDS cases that were 30-39 years old had the greatest decline (34%) since 1996. Those that were 50 or older made up 9% of diagnosed cases in 1996 and 13% in 1997.

***Mode of HIV Exposure:*** The most commonly reported HIV infection exposure group continues to be MSM, accounting for 57% of non-S-KC and 76% of S-KC cases diagnosed since the beginning of the epidemic. For cumulative cases diagnosed outside of S-KC, the next most commonly reported infection risk group was IDU (15%), while in S-KC it was MSM/IDU (10%) (Table 1). Table 2 shows similar distributions for cases diagnosed since 1993. Fifty percent of non-S-KC cases were attributable to MSM while 18% were attributable to

## Table 1. Characteristics of Washington State AIDS cases by AIDSNet Region* of residence at time of diagnosis, as reported to the Department of Health through June 30, 1999

| AIDSNET Region* | 1 | 2 | 3 | 5 | 6 | Non S-KC | S-KC |
|---|---|---|---|---|---|---|---|
| **Sex** | | | | | | | |
| Male | 428 (93%) | 236 (87%) | 600 (88%) | 774 (85%) | 627 (89%) | 2665 (88%) | 5507 (96%) |
| Female | 33 (7%) | 36 (13%) | 83 (12%) | 137 (15%) | 78 (11%) | 367 (12%) | 254 (4%) |
| **Race/Ethnicity** | | | | | | | |
| White | 403 (87%) | 188 (69%) | 583 (85%) | 642 (71%) | 625 (89%) | 2441 (81%) | 4658 (81%) |
| Black | 20 (4%) | 12 (4%) | 31 (5%) | 171 (19%) | 26 (4%) | 260 (9%) | 575 (10%) |
| Hispanic | 23 (5%) | 68 (25%) | 33 (5%) | 60 (7%) | 34 (5%) | 218 (7%) | 332 (6%) |
| Asian/PI | 3 (1%) | 1 (<1%) | 15 (2%) | 15 (2%) | 6 (1%) | 40 (1%) | 112 (2%) |
| Am Indian/AK Nat | 11 (2%) | 3 (1%) | 20 (3%) | 22 (2%) | 12 (2%) | 68 (2%) | 84 (2%) |
| Unknown | 1 (<1%) | 0 (0%) | 1 (<1%) | 1 (<1%) | 2 (<1%) | 5 (<1%) | 0 (0%) |
| **Age at Diagnosis (yrs)** | | | | | | | |
| 0-4 | 1 (<1%) | 2 (1%) | 2 (<1%) | 7 (1%) | 1 (<1%) | 13 (<1%) | 11 (<1%) |
| 5-12 | 1 (<1%) | 0 (0%) | 2 (<1%) | 1 (<1%) | 0 (0%) | 4 (<1%) | 3 (<1%) |
| 13-19 | 4 (1%) | 3 (1%) | 3 (<1%) | 5 (1%) | 4 (1%) | 19 (1%) | 7 (<1%) |
| 20-29 | 80 (17%) | 64 (24%) | 107 (16%) | 200 (22%) | 118 (17%) | 569 (19%) | 877 (15%) |
| 30-39 | 214 (46%) | 108 (40%) | 304 (45%) | 412 (45%) | 310 (44%) | 1348 (45%) | 2798 (49%) |
| 40-49 | 98 (21%) | 60 (22%) | 196 (29%) | 202 (22%) | 193 (27%) | 749 (25%) | 1517 (26%) |
| Over 49 | 63 (14%) | 35 (13%) | 69 (10%) | 84 (9%) | 78 (11%) | 329 (11%) | 548 (10%) |
| Median Age | 36.0 | 35.5 | 37.0 | 35.0 | 37.0 | 36.0 | 37.0 |
| **Exposure Category** | | | | | | | |
| MSM | 277 (60%) | 142 (52%) | 397 (58%) | 475 (52%) | 422 (60%) | 1713 (57%) | 4387(76) |
| IDU | 66 (14%) | 35 (13%) | 80 (12%) | 162 (18%) | 101 (14%) | 444 (15%) | 313(5%) |
| MSM/IDU | 46 (10%) | 34 (13%) | 71 (10%) | 87 (10%) | 60 (9%) | 298 (10%) | 587(10%) |
| Heterosex. contact | 28 (6%) | 29 (11%) | 59 (9%) | 82 (9%) | 65 (9%) | 263 (9%) | 178(3%) |
| Hemophilia | 5 (1%) | 7 (3%) | 8 (1%) | 17 (2%) | 14 (2%) | 51 (2%) | 28(1%) |
| Transfusion | 15 (3%) | 2 (1%) | 13 (2%) | 17 (2%) | 17 (2%) | 64 (2%) | 51(1%) |
| Parent at Risk/HIV+ | 2 (<1%) | 2 (1%) | 2 (<1%) | 7 (1%) | 1 (<1%) | 14 (1%) | 13(<1%) |
| Undetermined | 22 (5%) | 21 (8%) | 49 (7%) | 63 (7%) | 25 (4%) | 180 (6%) | 202(4%) |
| **TOTAL** | **461 (5%)** | **272 (3%)** | **683 (8%)** | **911 (10%)** | **705 (8%)** | **3032 (35%)** | **5761(65%)** |
| Presumed Living | 205 (45%) | 123 (45%) | 299 (44%) | 396 (44%) | 332 (47%) | 1355 (45%) | 2309(40%) |

***The lead counties by AIDSNet Region are:**

Region 1: Spokane
Region 2: Yakima
Region 3: Snohomish
Region 4: King
Region 5: Pierce
Region 6: Clark

**Table 2. Characteristics of Washington State AIDS cases diagnosed since January 1, 1993, by AIDSNet Region of residence at time of diagnosis, as reported to the Department of Health through June 30, 1999**

| AIDSNET Region* | 1 | 2 | 3 | 5 | 6 | Non S-KC | S-KC |
|---|---|---|---|---|---|---|---|
| **Sex** | | | | | | | |
| Male | 211 (90%) | 133 (84%) | 328 (84%) | 396 (80%) | 345 (87%) | 1413 (84%) | 2453 (94%) |
| Female | 23 (10%) | 26 (16%) | 61 (16%) | 101 (20%) | 50 (13%) | 261 (16%) | 158 (6%) |
| **Race/Ethnicity** | | | | | | | |
| White | 197 (84%) | 100 (63%) | 320 (82%) | 334 (67%) | 335 (85%) | 1286 (77%) | 1975 (76%) |
| Black | 14 (6%) | 8 (5%) | 21 (5%) | 103 (21%) | 23 (6%) | 169 (10%) | 322 (12%) |
| Hispanic | 13 (6%) | 50 (31%) | 22 (6%) | 32 (6%) | 25 (6%) | 142 (9%) | 199 (8%) |
| Asian/PI | 1 (<1%) | 0 (0%) | 10 (3%) | 11 (2%) | 5 (1%) | 27 (2%) | 60 (2%) |
| Am Indian/AK Nat | 8 (3%) | 1 (1%) | 15 (4%) | 16 (3%) | 5 (1%) | 45 (3%) | 55 (2%) |
| Unknown | 1 (<1%) | 0 (0%) | 1 (<1%) | 1 (<1%) | 2 (1%) | 5 (<1%) | 0 (0%) |
| **Age at Diagnosis (yrs)** | | | | | | | |
| 0-4 | 1 (<1%) | 2 (1%) | 1 (<1%) | 2 (<1%) | 1 (<1%) | 7 (<1%) | 5 (<1%) |
| 5-12 | 1 (<1%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (<1%) | 2 (<1%) |
| 13-19 | 1 (<1%) | 1 (1%) | 2 (1%) | 3 (1%) | 2 (1%) | 9 (1%) | 2 (<1%) |
| 20-29 | 29 (12%) | 43 (27%) | 58 (15%) | 84 (17%) | 63 (16%) | 277 (17%) | 359 (14%) |
| 30-39 | 113 (48%) | 62 (39%) | 172 (44%) | 234 (47%) | 182 (46%) | 763 (46%) | 1242 (48%) |
| 40-49 | 57 (24%) | 31 (20%) | 117 (30%) | 134 (27%) | 109 (28%) | 448 (27%) | 733 (28%) |
| Over 49 | 32 (14%) | 20 (13%) | 39 (10%) | 40 (8%) | 38 (10%) | 169 (10%) | 268 (10%) |
| Median Age (yrs) | 37.0 | 35.0 | 37.0 | 36.0 | 37.0 | 37.0 | 37.0 |
| **Exposure Category** | | | | | | | |
| MSM | 125 (53%) | 71 (45%) | 193 (50%) | 222 (45%) | 219 (55%) | 830 (50%) | 1881 (72%) |
| IDU | 45 (19%) | 23 (15%) | 53 (14%) | 116 (23%) | 71 (18%) | 308 (18%) | 182 (7%) |
| MSM/IDU | 21 ( 9%) | 15 (9 %) | 35 ( 9%) | 40 ( 8%) | 30 (8%) | 141 (8%) | 240 (9%) |
| Heterosexual contact | 18 (7%) | 26 (16%) | 50 (13%) | 65 (13%) | 42 (11%) | 201 ( 12%) | 116 (4%) |
| Hemophilia | 0 (0%) | 4 (3%) | 5 (1%) | 6 (1%) | 7 (2%) | 22 (1%) | 10 (<1%) |
| Transfusion | 6 (3%) | 2 (1%) | 7 (2%) | 3 (1%) | 4 (1%) | 22 (1%) | 10 (<1%) |
| Parent at Risk/HIV+ | 2 (1%) | 2 (1%) | 1 (<1%) | 2 (<1%) | 1 (<1%) | 8 (1%) | 7 (<1%) |
| Undetermined | 17 (7%) | 16 (10%) | 43 (11%) | 43 (9%) | 21 (5%) | 140 (8%) | 164 (6%) |
| **TOTAL** | **234 (5%)** | **159 (4%)** | **389 (9%)** | **497 (12%)** | **395 (9%)** | **1674 (39%)** | **2611 (61%)** |
| Presumed Living | 168 (72%) | 102 (64%) | 263 (68%) | 339 (68%) | 285 (72%) | 1157 (69%) | 1828 (70%) |

IDU. For S-KC cases, 72% were attributable to MSM, while 9% were attributable to MSM/IDU and 7% to IDU.

In Washington State, from 1996 to 1997, AIDS incidence declined 36% among MSM and 39% among IDUs. Cases attributable to MSM/IDU made up an increasing proportion of cases from 1996 to 1997 (8% vs. 10%, respectively). The proportion of cases with no identified risk increased from 8% in 1996 to 13% in 1997. However, more recently diagnosed cases may still be under investigation to determine the HIV exposure mode.

Since 1993 in Washington State, MSM has been the major mode of transmission for males accounting for 70% of all cases. Heterosexual contact was the most often reported risk for females (49%). IDUs diagnosed with AIDS represented 9% of AIDS cases in men and 32% of cases in women. In all 5 regions, excluding S-KC, MSM was the most commonly reported HIV exposure category, followed by IDU and then MSM/IDU. (Table 2).

***Pediatric AIDS Cases:*** There have been a total of 31 pediatric (under 13 years of age) AIDS cases reported in Washington State. In 1997-98, there were two pediatric AIDS cases reported compared to 8 in1995-96. While the number of pediatric cases in Washington has always been small, this drop likely reflects the continued success of efforts to reduce perinatal transmission through promotion of voluntary HIV testing and zidovudine therapy for pregnant HIV-infected women and their infants. Such trends have been observed in states with higher rates of pediatric HIV and AIDS.

## Comments

The most notable trend over the past couple of years is the decrease in the number of AIDS cases and AIDS deaths in Washington State in all demographic and risk groups, as well as in all regions of the state. Along with the decrease in cases, the epidemic appears to be shifting to different populations, namely IDU, women, people of color, and persons living outside S-KC. Increases are also being seen in the proportion of cases that contracted AIDS by heterosexual contact. Region 5 is accounting for a greater proportion of AIDS cases outside S-KC, with increases in female and non-Hispanic black cases. While all of the regions saw higher proportions of 30-39 year old individuals with AIDS, Region 2 also had a high proportion of younger people (20-29 year olds) affected by AIDS. These trends are important guides for targeting prevention activities. The slower declines in AIDS incidence seen in these communities may reflect 1) changes in transmission dynamics to include new groups and/or 2) differences in access to care across affected communities.

Traditionally, long term collection and analysis of AIDS data offered the opportunity to monitor patterns of disease morbidity and mortality. These patterns were assumed to show, albeit in a delayed fashion, gross trends in HIV transmission. However, current studies show that newer treatment regimens (antiretroviral therapy including combination of reverse transcriptase inhibitors with protease inhibitors) have altered the natural history of HIV infection by delaying progression to AIDS. This delay has led to a dramatic decrease in the numbers of reported AIDS cases and deaths. As a result, when AIDS reporting is used to describe the epidemic, it appears to be on the decline. However, in fact, there is no evidence that HIV incidence has declined in recent years.

In the past, the state of Washington has only conducted surveillance for AIDS and symptomatic HIV cases. On September 1, 1999 Washington Administrative Code was changed, adding asymptomatic HIV infection as a reportable condition in Washington State. Consequently, this will be the final annual review article to include only AIDS case data. Future articles will include HIV data, which will reveal more about recent transmission and will improve the information base upon which HIV prevention and care services are planned.

❑ *Contributed by Kristen Janusz MPH*

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[1]Centers for Disease Control and Prevention. **HIV/AIDS Surveillance Report**, 1998:10 (No.2):p.8.

# Annual Review of the Epidemiology of AIDS in King County

The first AIDS case was diagnosed in King County (KC) in 1982. By the end of 1998, 5,718 KC residents had been diagnosed with AIDS and more than 3,400 had died. This article reviews the epidemiology of AIDS in KC through 1998, examines trends over the past five years, and makes comparisons with national data. The statistics in this article are derived from AIDS cases diagnosed in KC residents through 1998 and reported to Public Health - Seattle & King County by June 30, 1999. Due to delays in AIDS case reporting, 1997-1998 results are provisional and statistics from earlier years are subject to minor changes.

## KC AIDS Rates—National & State Comparisons

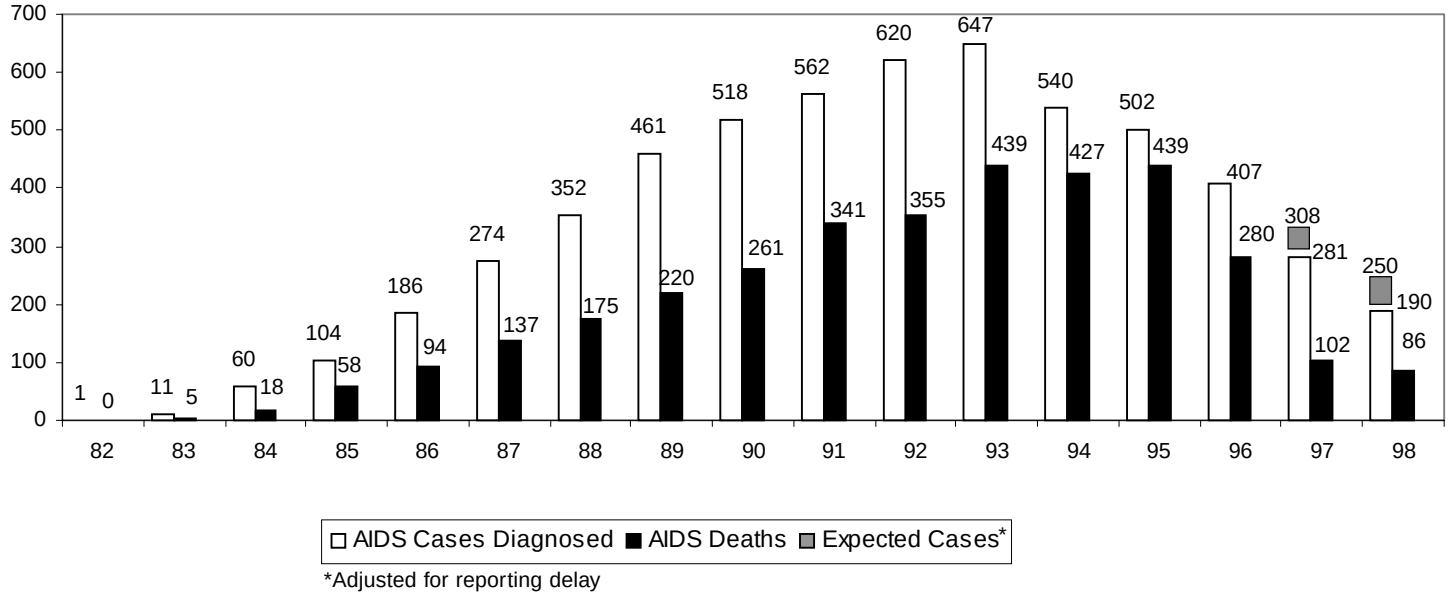
Comparing 1998 AIDS rates published by the Centers for Disease Control and Prevention (CDC),[1] the Seattle metropolitan statistical area (King, Snohomish and Island counties) ranks 59 among the 97 metropolitan areas in the U.S. with populations of 500,000 or more (data not shown). The rate of reported AIDS cases in the Seattle metro area was 12.1 per 100,000 population. New York City had the highest rate at 85.9 cases per 100,000. Other areas with high rates in 1998 were Miami (73.3), Jersey City (58.9), San Francisco (57.6), Fort Lauderdale (55.6), and San Juan Puerto Rico (53.1). The rate in the Portland metro area was lower than Seattle at 8.6, as was the Tacoma rate at 7.8 per 100,000. US metropolitan areas with populations over 500,000 had an average rate of 23.0 cases per 100,000 compared to 10.3 per 100,000 in areas of 50,000 to 500,000 and 6.3 per 100,000 in non-metropolitan (rural) parts of the US. Overall, the average US rate of AIDS cases reported in 1998 (17.6) was 21% lower than the rate in 1997 (22.3).

King County has the highest rate of AIDS of all Washington counties. Although KC has less than one-third (29%) of Washington's population, approximately two-thirds of the state's cumulative AIDS cases have been diagnosed in KC residents (see Table 2 on page 2). However, there has been a significant trend toward proportionately fewer AIDS cases occurring in KC: in 1985, 79% of the State's cases were KC residents declining to 60% by 1998 (see Table 6 on page 5).

## Case Numbers and Deaths

King County AIDS cases increased annually through 1993 when 647 cases were reported (Figure 1). After accounting for reporting delay (the average lag between AIDS diagnosis

**Figure 1. AIDS cases and deaths in King County by year, 1982-1998**




*Adjusted for reporting delay

and receipt of a case report is > 4 months), approximately 308 cases in 1997 and 250 cases in 1998 are expected to eventually be recorded. The total annual number of new AIDS cases in KC is expected to continue to decline due primarily to improvements in treatment resulting in a delay of HIV progressing to AIDS. A similar drop in new annual AIDS cases has been observed in many other areas of the country. The proportion of AIDS cases among women and people of color, however, is projected to continue to increase (Figure 3 and Figure 4, respectively).

Figure 1 also shows the number of deaths occurring during each year. As of 6/30/99 a total of 3,448 (60%) of the 5,718 cumulative cases diagnosed through 12/98 had died. Deaths in 1996 were down 36% from the previous three years when an average of 435 (range 427-439) deaths occurred each year. Deaths further declined another 64% in 1997. In 1997, 102 deaths of persons diagnosed with AIDS in that year and previous years were recorded.

Major contributions to these declines in mortality most likely include recent improvements in antiviral treatment and prophylaxis for opportunistic infections and advances in the ability to use both HIV viral load and CD4 counts to tailor treatment regimens.

Between 1997 and 1998 the decline in mortality slowed. In 1998 there were 86 deaths, a decline of 16% from the previous year. Reasons for this recent trend likely include having reached the majority of HIV-infected individuals who know their serostatus, treatment failure caused by viral drug resistance, and ineligibility for or difficulty with adherence to treatment regimens.

## Geographic Distribution

The AIDS case report records the city and zip code of residence at time of the initial diagnosis of AIDS. Of the 5,718 cumulative King County AIDS cases, 82% resided in Seattle, 18% lived in other areas of the county and <1% were missing zip code information or did not have a permanent address. The geographic distribution of AIDS cases in KC has recently shifted somewhat: between 1987 and 1995, roughly 19% of cases each year were diagnosed in persons residing outside the city of Seattle while in 1997, 27% of cases occurred outside Seattle, and in 1998, 23% (data not shown).

Of cumulative AIDS cases through 1998, the proportion of female AIDS cases was 9% outside Seattle compared to 3% in Seattle (Table 1). Thirty-six percent of the KC female AIDS cases lived outside Seattle at the time of their diagnosis compared to 17% of the males. King County AIDS cases residing outside Seattle were more likely to have been exposed through injection drug use, by heterosexual contact or have undetermined risk compared to Seattle cases (21% vs. 10%). The racial/ethnic distribution was similar among AIDS cases in Seattle and the rest of the county.

Population-based AIDS rates vary widely within King County. For cases diagnosed in the 3-year interval 1/96 - 12/98, the city of Seattle average annual rate of 34.0 per 100,000 population was 5 times the rate observed in KC outside Seattle at 6.6 per 100,000. Within Seattle rates varied almost twelve-fold, from 149.0 per 100,000 in the Central area to 12.5 per 100,000 in north Seattle. A more detailed description of AIDS rates by geographic area in KC follows this article.

## Gender and Exposure Category

Of the 5,718 cumulative AIDS cases diagnosed in KC, 5,466 (96%) were male and 252 (4%) were female (Table 2). Female cases as a percent of all cases in KC have risen over time—from 2-3% in 1987-90 to 7% in 1995-96, 8% in 1997, and 9% in 1998 (Figure 3). Nationwide, according to statistics from the CDC, adult/adolescent females were 16% of the cumulative cases reported between 1981 and 1998, but 23% of cases reported in 1997.[1]

Among the cumulative adult/adolescent male AIDS cases in KC, 80% were men who had sex with other men (MSM), 11% were MSM who were also injection drug users (IDU), 4% were heterosexual IDU, and 1% were associated with heterosexual transmission (Figure 5). The routes of HIV transmission for KC adult male AIDS cases remained relatively stable between 1987 and 1994. In 1995 and 1996, however, a higher proportion of cases (7%) were associated with IDU and a lower proportion with male-male sex (75%) compared to previous years (data not shown). In 1998, 67% of adult/adolescent male cases were MSM, 8% IDU,

**Figure 2. Trends in the percent of total AIDS cases in King County by HIV exposure category, 1987-1998**

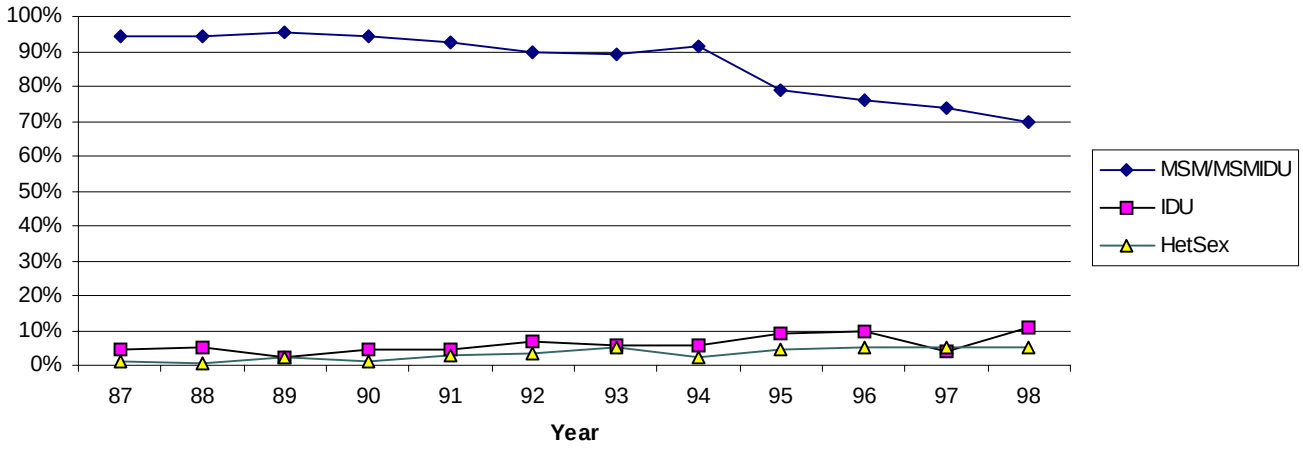



**Figure 3. Trends in the percent of total AIDS cases in King County by sex, 1987-1998**

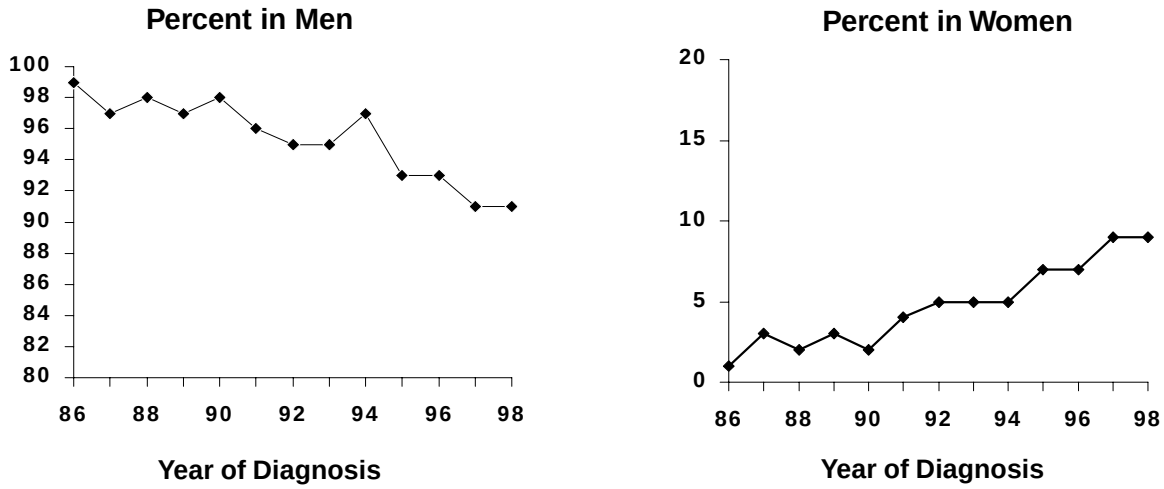



**Figure 4. Trends in the percent of total AIDS cases in King County by race, 1987-1998**

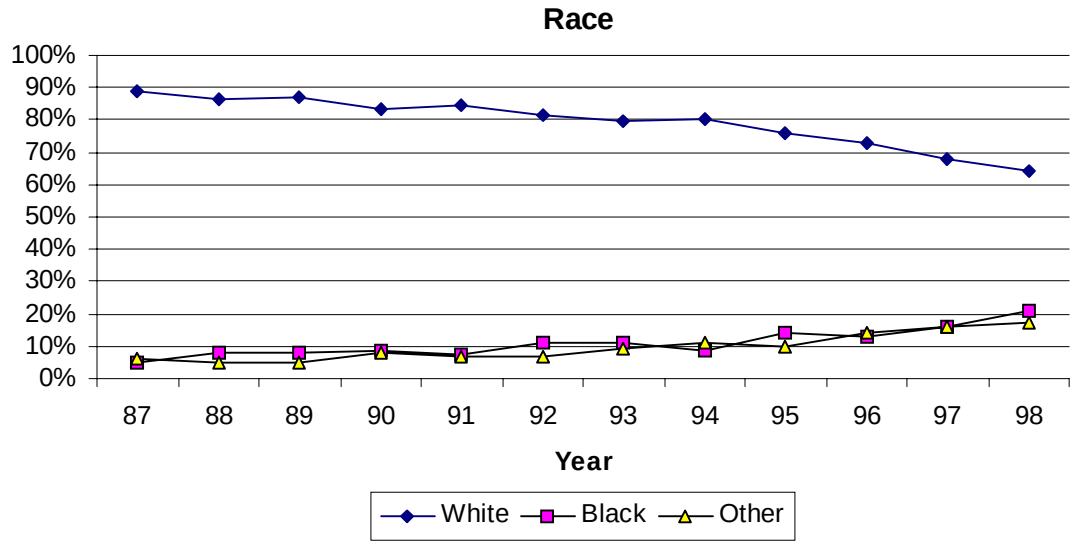


**Table 1. AIDS in King County by Geographical Region*, 1982-1998**

| | City of Seattle | | KC outside Seattle | |
|---|---|---|---|---|
| | No. | % | No. | % |
| **SEX** | | | | |
| Male | 4,528 | 97% | 936 | 91% |
| Female | 161 | 3% | 91 | 9% |
| **RACE/ETHNICITY** | | | | |
| White, not Hispanic | 3,805 | 81% | 823 | 80% |
| Black, not Hispanic | 461 | 10% | 107 | 10% |
| Hispanic | 257 | 5% | 70 | 7% |
| Asian/Pacific Islander | 92 | 2% | 19 | 2% |
| Am. Indian/AK Native | 74 | 2% | 8 | 1% |
| **EXPOSURE CATEGORY** | | | | |
| Male/male sex | 3,674 | 78% | 687 | 67% |
| Injection drug use (IDU) | 238 | 5% | 72 | 7% |
| IDU & male/male sex | 501 | 11% | 78 | 8% |
| Heterosexual contact | 107 | 2% | 70 | 7% |
| Undet./other/pediatric exposures | 169 | 4% | 120 | 12% |
| **TOTAL CASES*** | **4,689** | **82%** | **1,027** | **18%** |

*Excludes 2 cases whose residence within KC was unknown at the time of AIDS diagnosis

10% MSM/IDUs, 2% heterosexual and 12% unknown risk.

Nationwide, 57% of all cumulative adult/ adolescent male cases were exposed through sex with another man, 8% through male/male sexual contact and IDU, 22% through IDU, and 4% via heterosexual contact. In 1998, the proportion of US adult male cases attributed to sex with another male decreased to 45% whereas cases attributed to IDU and heterosexual contact were 21% and 7%, respectively.

Among KC women with AIDS, fewer were related to injection drug use and a greater proportion were attributed to heterosexual contact compared to the nation as a whole. Of the 245 KC adult/adolescent female AIDS cases, 74 (30%) were attributed to IDU and 122 (50%) to heterosexual contact (Figure 5) compared to 43% and 39% of all US female cases, respectively. Further exposure characterization of the 50% attributed to heterosexual exposure showed that 16% were exposed through sex with an IDU, 23% through sex with an HIV-infected man whose transmission route was not identified on the case report, 8% through sex with a bisexual man, and 2% through sex with a transfusion or blood product recipient.

Universal screening of blood for HIV antibody began in 1985. The effects of the virtual elimination of HIV transmission through blood transfusion and clotting products are reflected in declining numbers of AIDS cases attributed to blood product exposure in recent years. In 1998, 2 KC AIDS cases due to transfusions were reported; there were no cases reported in persons with hemophilia.

## Race/Ethnicity

The majority of AIDS cases in KC have occurred among Whites. In the 1990s, however, people of color have comprised an increasing proportion of AIDS cases, people of color were 11% of cases in 1982-86, 14% in 1987-91, 19% in 1992-94, 25% in 1995-96, 32% in 1997, and 36% in 1998. The proportion of KC AIDS cases occurring among Blacks rose from 5% in 1987 to 21% in 1998 (Figure 4). In the same time interval, the proportion of cases in persons of Hispanic ethnicity increased from 3% to 11% and cases among Native Americans went from 1% to 3%. African Americans and Hispanics also account for a disproportionate number of cases relative to their population in the county.

AIDS cases were diagnosed among Blacks and persons of Hispanic ethnicity for the 3-year period of 1996-98 at the average annual rate of 49.1 per 100,000 and 51.3 per 100,000, respectively (Table 3). This compares to a rate of 15.4 for Whites. For each racial/ethnic category, rates were considerably higher for

## Table 2. AIDS in King County: Cases diagnosed through 1998 and reported as of 6/30/99

| Category | Cases diagnosed in 1994 | | Cases diagnosed in 1995 | | Cases diagnosed in 1996[a] | | Cases diagnosed in 1997[a] | | Cases diagnosed in 1998[a] | | Cumulative Cases Reported 1982-1998[b] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOTAL CASES** | 540 | | 502 | | 407 | | 281 | | 190 | | 5,718 | |
| **SEX** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** | **No.** | **%** |
| Male | 522 | 97% | 468 | 93% | 378 | 93% | 257 | 91% | 173 | 91% | 5,466 | 96% |
| Female | 18 | 3% | 34 | 7% | 29 | 7% | 24 | 9% | 17 | 9% | 252 | 4% |
| **RACE/ETHNICITY** | | | | | | | | | | | | |
| White, not Hispanic | 434 | 80% | 382 | 76% | 299 | 73% | 192 | 68% | 121 | 64% | 4,629 | 82% |
| Black, not Hispanic | 45 | 8% | 70 | 14% | 51 | 13% | 39 | 14% | 39 | 21% | 568 | 10% |
| Hispanic | 33 | 6% | 34 | 7% | 36 | 9% | 30 | 11% | 20 | 11% | 327 | 6% |
| Asian/Pacific Islander | 13 | 2% | 10 | 2% | 9 | 2% | 9 | 3% | 5 | 3% | 111 | 2% |
| Am. Indian/AK Native | 15 | 3% | 6 | 1% | 12 | 3% | 11 | 4% | 5 | 3% | 83 | 1% |
| **AGE AT DIAGNOSIS** | | | | | | | | | | | | |
| <13 (yrs) | 2 | <1% | 1 | <1% | 3 | 1% | 1 | <1% | 0 | 0% | 14 | <1% |
| 13-19 | 1 | <1% | 0 | 0% | 1 | <1% | 1 | <1% | 0 | 0% | 10 | <1% |
| 20-29 | 82 | 15% | 72 | 14% | 57 | 14% | 42 | 15% | 24 | 13% | 977 | 17% |
| 30-39 | 250 | 46% | 236 | 47% | 207 | 51% | 137 | 49% | 93 | 49% | 2,795 | 49% |
| 40-49 | 155 | 29% | 137 | 27% | 111 | 27% | 68 | 24% | 48 | 25% | 1,417 | 25% |
| >49 | 50 | 9% | 56 | 11% | 28 | 7% | 32 | 11% | 25 | 13% | 505 | 9% |
| **HIV EXPOSURE[c]** | | | | | | | | | | | | |
| Male/male sex | 430 | 80% | 352 | 70% | 281 | 69% | 177 | 63% | 116 | 61% | 4,362 | 77% |
| Injection drug use (IDU) | 27 | 5% | 47 | 9% | 35 | 9% | 14 | 5% | 20 | 11% | 310 | 5% |
| IDU & male/male sex | 51 | 9% | 45 | 9% | 30 | 7% | 30 | 11% | 17 | 9% | 580 | 10% |
| Heterosexual contact | 15 | 3% | 21 | 4% | 20 | 5% | 16 | 6% | 10 | 5% | 177 | 3% |
| Hemophilia | 1 | <1% | 1 | <1% | 3 | 1% | 3 | 1% | 0 | 0% | 29 | 1% |
| Transfusion | 3 | 1% | 1 | <1% | 0 | 0% | 3 | 1% | 2 | 1% | 51 | 1% |
| Parent at risk/has HIV | 2 | <1% | 1 | <1% | 3 | 1% | 1 | <1% | 0 | 0% | 13 | <1% |
| Undetermined/other | 11 | 2% | 34 | 7% | 35 | 9% | 37 | 13% | 25 | 13% | 196 | 3% |
| **Deaths During Period** | **427** | | **439** | | **280** | | **102** | | **86** | | **3,448** | |

[a] Provisional data due to reporting delays
[b] Cumulative cases in King County residents meeting the 1993 CDC surveillance case definition of AIDS diagnosed through 12/31/98 and reported as of 6/30/99; includes cases diagnosed prior to 1993
[c] Cases with more than one risk factor other than the combinations given are tabulated only in the category listed first

**Table 3. AIDS cases diagnosed in King County in 1996-1998 and average annual rates per 100,000 population by race/ethnicity**

| | MALE | | FEMALE | | TOTAL | |
|---|---|---|---|---|---|---|
| **RACE/ETHNICITY** | No. | Rate (95% CI) | No. | Rate (95% CI) | No. | Rate (95% CI) |
| White, not Hispanic | 582 | 29.6 (27.2-32.1) | 30 | 1.5 (1.0-2.1) | 612 | 15.4 (14.2-16.7) |
| Black, not Hispanic | 104 | 78.1 (63.8-94.6) | 25 | 19.3 (12.5-28.5) | 129 | 49.1 (41.0-58.3) |
| Hispanic | 82 | 95.9 (76.3-119.0) | 4 | 4.9 (1.3-12.2) | 86 | 51.3 (41.1-63.4) |
| Asian/Pacific Islander | 18 | 7.5 (4.5-11.8) | 5 | 2.0 (0.6-4.6) | 23 | 4.7 (3.0-7.0) |
| American Indian/ Alaska Native | 22 | 82.4 (51.7-124.7) | 6 | 21.8 (8.0-46.8) | 28 | 51.6 (34.3-74.6) |
| **TOTAL, FOR ALL RACES** | **808** | **32.9 (30.7-35.3)** | **70** | **2.8 (2.2-3.5)** | **878** | **17.7 (16.6-19.0)** |

* Rates in this table were calculated by summing cases diagnosed during 3 year period 1996-1998 divided by the sum of population estimates for each racial/ethnic group for each of the 3 years. Population data were extrapolated from the 1990 U.S. census.

males than females. Overall the rate in males was 32.9 per 100,000 compared to 2.8 in females, a 12-fold difference (Table 3). It is important to note that with the exception of Asian/Pacific Islanders the average annual rates for each racial/ethnic group is significantly higher than that for Whites.

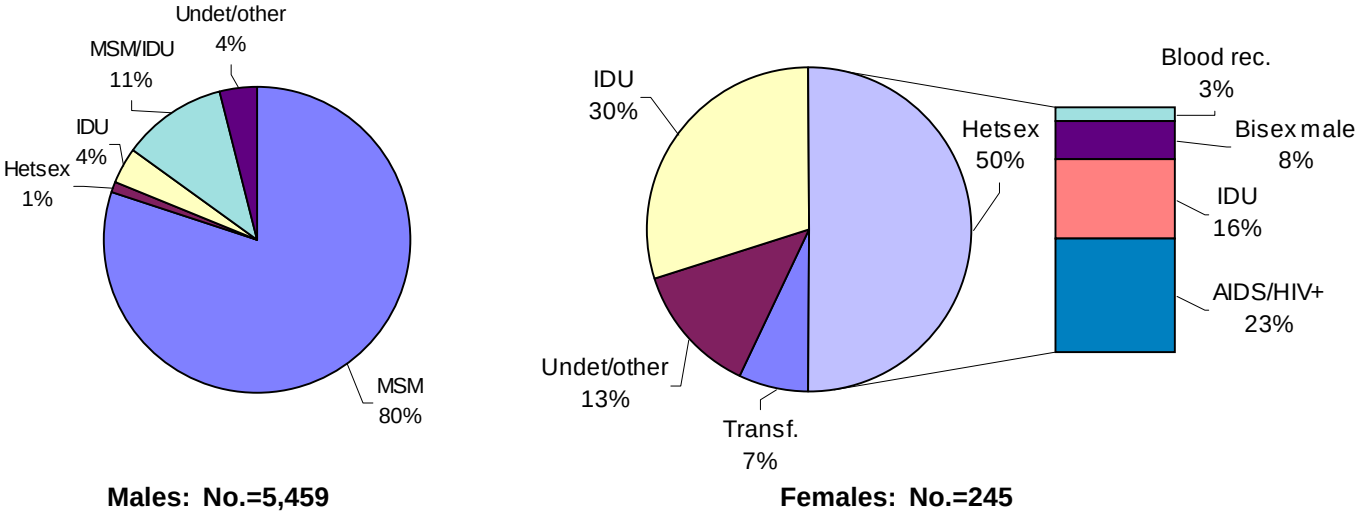
National statistics also show the marked disproportionate burden of AIDS among people of color. African Americans, who are 12% of the US population, comprise 36% of cumulative AIDS cases. Hispanics total about 9% of the population but are 18% of cases. The AIDS rate for US cases reported in 1998 was 66.4 per 100,000 for African Americans and 28.1 for Hispanics compared to 8.2 for Whites.[1]

The proportion of cases by race varied between females and males in KC. Black males comprised 13% of the male cases diagnosed between 1996 and 1998 and had nearly three times the AIDS rate of White men. Black females were 36% of the female cases and had a rate 13 times higher than White females (Table 3). Nationwide, the relative difference between rates in Blacks and Whites by sex shows a similar increase in the discrepancy of rates between Blacks and Whites. For US AIDS cases reported in 1998, the rates in Black males and females were 7 and 21 times higher than the rates in White males and females, respectively.[1]

Mode of HIV exposure varied by race (data not shown in tables). Among cumulative White male AIDS cases in KC, 94% had male/male sexual contact with (11%) or without (83%) injection drug use, 3% were reported as heterosexual IDUs, and 1% of the cases were exposed through heterosexual contact. African American males were less likely than White males to have been exposed through male/male sex (69%) and more likely to have acquired HIV through IDU (15%) or heterosexual contact (4%).

Among the 314 male Hispanic cases, 82% were reported with male/male sexual contact, 9% with IDU, and 3% with heterosexual transmission. Among the 71 Native American males reported with AIDS, 83% were exposed through male/male sex, including 27% who were reported as MSM who also injected drugs, and 10% were heterosexual IDU. The HIV risk in the 103 reported male Asian/Pacific Islanders most closely resembled White cases with 87% in men who have sex with men and 3% in heterosexual drug injectors.

**Figure 5. Adult/adolescent AIDS cases diagnosed in King County through 1998 by gender and exposure category**




**Males: No.=5,459** **Females: No.=245**

Among the 252 cumulative female AIDS cases there were some differences by race in mode of exposure. Twenty-six percent of the 145 White women with AIDS had IDU exposure, 53% had heterosexual risk, and 10% unidentified risk. Among 74 African American women with AIDS, 36% had IDU exposure, 41% heterosexual, and 16% unidentified risk.

The number of female cases among Hispanic (13), Asian (8) and American Indian/Alaska Natives (12) was too small to make fully reliable comparisons of mode of exposure. Nevertheless, the distribution of exposure risk was as follows: for Hispanics, 8% had IDU exposure and 69% had heterosexual risk. For Asians, 38% had heterosexual risk and 50% had no identified risk. Sixty-seven percent of American Indian/Alaska Native women had IDU exposure, 25% had heterosexual exposure and 8% had no identified risk.

## Age at Diagnosis

AIDS affects persons at a relatively young age. Almost half (49%) of all KC AIDS cases were between 30 and 39 years old at the time of their AIDS diagnosis, 25% were 40 to 49 years old, and 17% were 20 to 29 years old (Table 2). A higher proportion of female (32%) than male (17%) cases were under 30 at the time of their AIDS diagnosis. A similar gender difference is seen for all US cases. In KC, a cumulative total of 14 pediatric AIDS cases had been diagnosed through 1998, with 7 of these diagnosed since 1992. A cumulative total of 10 adolescent (age 13-19) AIDS cases had been reported, with 4 of these diagnosed since 1992.

## Comments

The first AIDS case in a King County resident was diagnosed in 1982, just 17 years ago. During the initial phase of the epidemic new cases accumulated rapidly. Although case numbers continued to increase every year through the first decade, the rate of increase slowed significantly after 1989 with cases peaking in 1993 and declining since then. This trend is primarily due to declining annual number of AIDS cases among MSM with lesser declines among other risk categories. The proportion of AIDS cases among women and people of color, continue to increase. This pattern reflects a peak in HIV transmission among MSM which is believed to have occurred in the early 1980s.

In 1996, for the first time, there was a significant drop in deaths among persons diagnosed with AIDS with a concomitant increase in the number of persons living with AIDS. This effect was attributed primarily to improvements in the clinical monitoring and treatment of HIV disease. This trend continues to date although there is evidence that the rate of decline is slowing.

While the decrease in new annual AIDS cases and AIDS deaths is extremely encouraging, AIDS remains a very significant health issue in King County. Currently an estimated 2,270 persons are living with AIDS, an increase of almost 300 persons in over the past two years. Current estimates suggest that about 8,000 persons in KC are living with HIV infection. With the implementation of HIV infection reporting in late 1999, we expect to have a better overall picture of the impact of HIV and AIDS on our community.

Other publications on the epidemiology of HIV and AIDS in KC are available. The HIV/AIDS Epidemiology Fact Sheets include general reports on HIV and AIDS in KC as well as targeted populations including MSM, substance users, people of color, women, young people, and homeless adults. The KC HIV/AIDS Epidemiology Profile for Community Planning presents local data on HIV, AIDS, STDs and other surrogate measures useful for planning HIV prevention and education programs.

If you would like any of these publications, please call the HIV/AIDS Epidemiology Program at (206) 296-4645. Most can also be accessed from Public Health-Seattle & King County's WEB home page under the AIDS Information section at: http:// www.metrokc.gov.health.

Questions about AIDS surveillance and epidemiology in King County may be addressed to epidemiologists Drs. Sharon Hopkins or Susan Barkan at the HIV/AIDS Epidemiology Unit at Public Health - Seattle & King County at (206) 296-4645 or e-mail Sharon.Hopkins@metrokc.gov or Susan. Barkan@metrokc.gov.

❑ *Contributed by Susan Barkan PhD*

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[1] Centers for Disease Control and Prevention. **HIV/AIDS Surveillance Report**, 1998;10(No 2):1-43.

# Rates of AIDS Cases by Geographical Area in King County

Mapping of the residence of AIDS patients at the time of diagnosis generally reveals marked concentrations of cases in urban areas of greatest population density. Within Washington, the majority of cases reside in King County, although the County's proportion of cases has dropped from about 75% in the late 1980s to 64% in recent years. There is also great geographic variation in where AIDS cases occur within King County, with about 80% of cases residing within the city of Seattle at the time of AIDS diagnosis. This information is important in planning AIDS care services and in targeting HIV prevention efforts.

For this report, the rates of AIDS cases per 100,000 population diagnosed from 1996-1998 and reported through June 30, 1999 are calculated by geographical area in King County. Data from 1998 are provisional because of reporting delay. The rates will increase when all diagnosed cases are reported, however, reporting delay is not expected to affect the relative differences between geographical areas.

The population for each area for each of the three years was estimated by extrapolation from the U.S. Bureau of Census 1990 census. Geographical areas used are based on aggregations of census tracts which were originally designed by Public Health-Seattle & King County to correspond as closely as possible with neighborhoods, utilization of clinics, travel patterns, and other factors of community interaction. Since census tract is not recorded for AIDS cases, some change in these boundaries was necessitated by the fact that ZIP codes overlap some census tracts. As a result, geographical areas do not correspond precisely to city boundaries.

The confidence intervals take into account the degree of variability in the data and represent the range of values within which, upon repeated measure, the rate can be expected to fall 95% of the time. ZIP codes are shown in Table 1. Cumulative AIDS cases, AIDS cases diagnosed 1996-1998, annual rates per 100,000, and 95% confidence intervals (CI) are shown in Table 2.

As previously reported, the highest rates for AIDS were in Seattle, with lower rates occurring in King County outside Seattle. The overall average annual rate for Seattle was 34.0 (all rates are per 100,000 population). Within Seattle, rates ranged from 12.5 in North Seattle to 149.9 in the Central area. It is important to note that there continues to be a significant decline in the overall average annual rate of AIDS in Seattle since the 1993-1995 report in which the average annual rate was 70.8 per 100,000.

The overall average annual rate for King County outside Seattle also declined, to 6.6. Rates ranged from 11.8 in Bellevue and White Center/Skyway areas to 1.9 in Bothell/Woodinville. While rates of AIDS actually increased since 1993-95 in one area, Eastgate/Issaquah, it should be noted that rates from areas with small populations will vary as new cases accrue, and should be interpreted with caution.

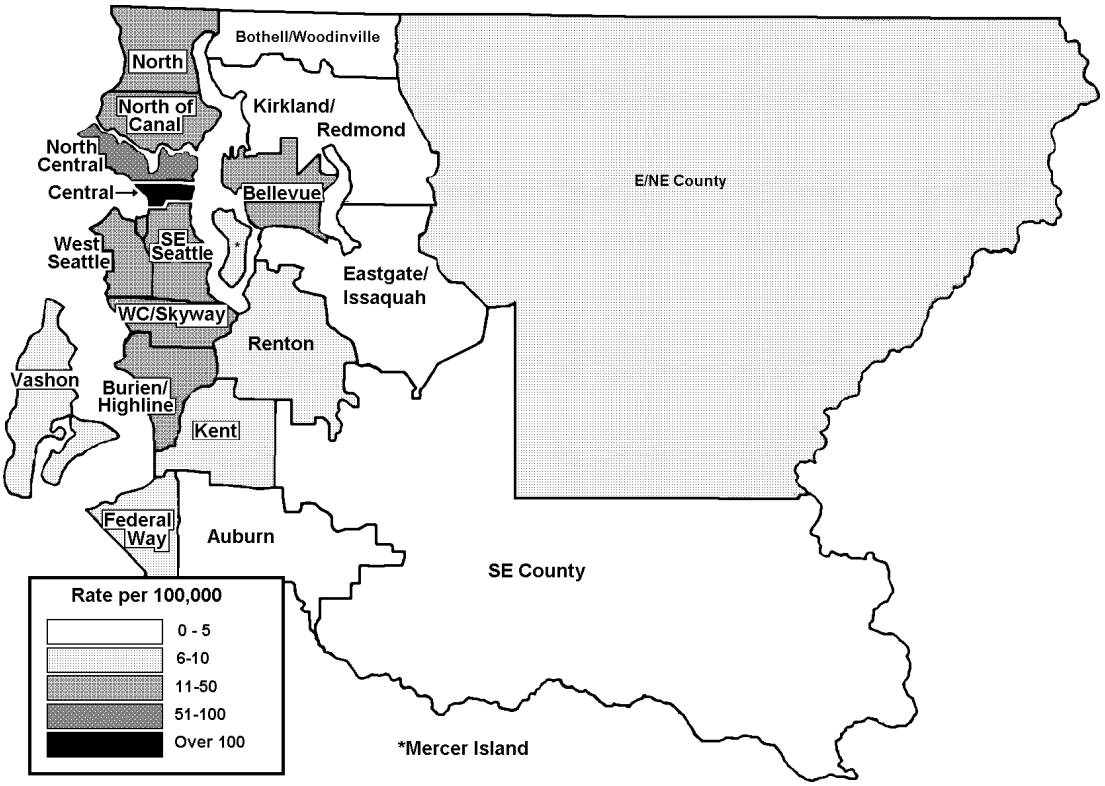
❑ *Contributed by Susan Barkan PhD*

## Table 1. ZIP Codes by Geographical Area

| SEATTLE | |
|---|---|
| Central | 98101, 98104, 98111, 98114, 98121, 98122 |
| North | 98125, 98133, 98155, 98160, 98177 |
| North Central | 98102, 98109, 98112, 98119, 98199 |
| North of Canal | 98103, 98105, 98107, 98115, 98117, 98145, 98195 |
| Southeast | 98108, 98118, 98124, 98134, 98144 |
| West | 98106, 98116, 98126, 98136 |

| KING COUNTY OUTSIDE SEATTLE | |
|---|---|
| Auburn | 98001, 98002, 98047, 98071 |
| Bellevue | 98004, 98005, 98007, 98008, 98009, 98039 |
| Bothell/Woodinville | 98011, 98028, 98041, 98072 |
| Burien/Highline | 98062, 98138, 98148, 98158, 98166, 98188, 98198 |
| East/Northeast County | 98014, 98019, 98024, 98045, 98050, 98051, 98065, 98068, 98224, 98288 |
| Eastgate/Issaquah | 98006, 98027, 98029 |
| Federal Way | 98003, 98023, 98054, 98063 |
| Kent | 98031, 98032, 98035, 98064 |
| Kirkland/Redmond | 98033, 98034, 98052, 98053, 98073, 98083 |
| Mercer Island | 98040 |
| Renton | 98055, 98056, 98057, 98058, 98059 |
| Southeast County | 98010, 98022, 98025, 98038, 98042, 98048 |
| Vashon | 98013, 98070 |
| White Center/Skyway | 98146, 98168, 98178 |

## Figure 1. Average Annual AIDS Rates in King County, 1996-1998




## Table 2. Average Annual AIDS Rates by Geographical Area in King County, 1996-1998

| GEOGRAPHICAL AREA | Cumulative AIDS Cases 1982-98 | AIDS CASES 1996--98 | RATE PER 100,000 | LOWER 95% CI | UPPER 95% CI |
|---|---|---|---|---|---|
| **SEATTLE** | | | | | |
| Central | 1,374 | 213 | 149.9 | 130.5 | 171.4 |
| North Central | 1,564 | 188 | 67.7 | 58.4 | 78.1 |
| North of Canal | 585 | 71 | 14.1 | 11.0 | 17.7 |
| North | 293 | 48 | 12.5 | 9.2 | 16.6 |
| Southeast Seattle | 364 | 46 | 18.4 | 13.5 | 24.6 |
| West Seattle | 294 | 41 | 17.9 | 12.9 | 24.3 |
| **Subtotal** | **4,474** | **607** | **34.0** | **31.3** | **36.8** |
| **NON-SEATTLE** | | | | | |
| Auburn | 59 | 10 | 3.9 | 1.9 | 7.1 |
| Bellevue | 148 | 30 | 11.8 | 8.0 | 16.8 |
| Bothell/Woodinville | 38 | 4 | 1.9 | 0.5 | 4.7 |
| Burien/Highline | 134 | 25 | 11.0 | 7.1 | 16.3 |
| East/Northeast County | 27 | 9 | 8.6 | 3.9 | 16.2 |
| Eastgate/Issaquah | 40 | 7 | 3.0 | 1.2 | 6.2 |
| Federal Way | 89 | 21 | 8.4 | 5.2 | 12.9 |
| Kent | 92 | 25 | 9.5 | 6.1 | 14.0 |
| Kirkland/Redmond | 108 | 20 | 4.4 | 2.7 | 6.8 |
| Mercer Island | 23 | 4 | 6.2 | 1.7 | 15.5 |
| Renton | 80 | 20 | 6.0 | 3.7 | 9.2 |
| Southeast County | 33 | 5 | 2.0 | 0.6 | 4.6 |
| Vashon | 24 | 2 | 6.4 | 0.7 | 21.9 |
| White Center/Skyway | 132 | 27 | 11.8 | 7.8 | 17.2 |
| **Subtotal** | **1,027** | **209** | **6.6** | **5.7** | **7.6** |
| ZIP UNKNOWN/HOMELESS | 217 | 62 | -- | -- | -- |
| **ALL KING COUNTY** | **5,718** | **878** | **17.7** | **16.6** | **19.0** |

# HIV Seroincidence among Seattle-area Men Who Have Sex with Men—a preliminary estimate using a new HIV antibody testing technology

Several indicators suggest that the incidence of new HIV infections among Seattle men who have sex with men (MSM) may have declined over the past decade: The positive HIV antibody test prevalence among MSM at the Harborview Medical Center STD clinic decreased from 36% in 1988-89 to 5% in 1996-97 (although STD clinic attendees may have changed over time). And, consistent decreases in AIDS incidence among MSM since 1994 corroborate that HIV seroincidence may have begun to lessen about a decade earlier, (although this decline is at least partly due to improved HIV treatments that slow progression to AIDS). However, a recent analysis of data from MSM clients at the primary PHSKC alternative HIV test site (HAP) who initially tested antibody-negative and tested subsequently suggest that the incidence of new infections among King County MSM has been relatively stable between 1986 and 1998, ranging between 1.3% and 1.7% annually. In light of the current resurgence of bacterial sexually transmitted diseases (STDs) among Seattle MSM, there is a clear need to detect what may be a concomitant increase in HIV seroincidence in this population.

To date, measuring HIV seroincidence has been accomplished using two methods: by back calculation from AIDS incidence data and by longitudinal observation of uninfected persons at risk of infection. Each of these methods is seriously limited. Although the completeness of AIDS surveillance data ensures that AIDS case reports are representative of the population of persons who became infected with HIV, they do not represent persons currently at risk, nor do they accurately represent the population of persons at risk at any one time. Antecedent HIV infections for incident cases of AIDS occured on average ten years prior to the onset of clinical disease, before the extensive use of the new highly active anti-retroviral treatments for HIV (HAART). However, because of variation in the incubation period of HIV, those infections could have occurred either earlier or later than ten years before the onset of symptoms. In addition, a change in the AIDS case definition in 1993 further obscures the relationship between AIDS incidence data and estimates of HIV seroincidence.

Measuring HIV seroincidence through longitudinal studies of persons at risk for infection, usually repeat HIV testing clients, has met with some success.[1] This method has been used to estimate seroincidence among King County MSM to be 1.5 new infections per 100 person-years during 1997-1998 (95% confidence interval; 0.9-2.5). However, incidence estimates using this method over-represent initially seronegative, repeat testers and under-represent populations which test less frequently. In Seattle testing populations this likely leads to the under-representation of African Americans among MSM. While African Americans account for 5.5% of all MSM seeking testing at HAP, they comprise only 2.5% of MSM who test seronegative and return for retesting at a later date.

A new method of calculating seroincidence among testing populations requires only one test from each client, more equitably representing the entire group of people seeking testing. This method is based on a new version of the standard enzyme-linked immunoassay (EIA) antibody test that can help determine how recently a person was infected with HIV. By diluting the sample and shortening incubation times this new laboratory test reduces the sensitivity of the EIA. When antibody levels are relatively low (as during the first few months after infection) the new "less sensitive" EIA (LS-EIA) will be negative, whereas the standard EIA will be positive.

Studies to date suggest that the LS-EIA will be negative in the face of a positive standard EIA for about 4-6 months, permitting the identification of recent infections.[2] Conversely, a person with a positive EIA and a positive LS-EIA was most likely infected sometime beyond six months previous to being tested. Use of the EIA and LS-EIA together (termed the sensitive/less-sensitive method, or S/LS) may have clinical benefits and presents an opportunity to inexpensively measure HIV seroincidence. Janssen and colleagues propose a simple formula to estimate incidence among

a testing population:

**Incidence = (N recent seroconverters) *(365 /T)(100)(N recent seroconverters + N long-standing positives)**

where N recent seroconverters = the number of persons testing EIA-positive, LS-EIA-negative for a specific time period and testing population, N long-standing positives = the number of persons testing EIA-positive and LS-EIA positive, and T = the mean time between production of sufficient antibodies to register as positive on the standard EIA and production of sufficient antibodies to register as positive on an LS-EIA.

To estimate local seroincidence, the PHSKC laboratory ran LS-EIA tests on 75 EIA-positive sera obtained from clients of the Harborview Medical Center STD clinic and HAP between October 13, 1998 and June 17, 1999. Thirteen (26%) of 51 sera from EIA-positive MSM had negative results on the LS-EIA, indicating probable recent infection. Documentation of previous negative EIA results was available for six of the thirteen clients from which samples had been obtained. Two of these clients had been negative 6 months prior to the LS-EIA; two had been negative one year prior to the LS-EIA; and, negative results had been documented two or more years prior for the other two.

Based on the proportion of recent infections among seropositives, seroincidence among MSM using HAP and STD test sites was estimated to be 3.2 new infections per 100 person-years for the period (95% CI; 2.5, 3.6). (When analysis was limited to testers using the HAP site, seroincidence was estimated to be 2.2 infections per 100 person-years.) It is of particular note that while only 5.5% of MSM seeking testing between 10/13/98 and 6/17/99 were African American, 30.8% of the 13 recent MSM seroconverters were African American. Multivariate analysis substantiated the strong association between recent seroconversion and African American race ($p = 0.001$).

While the S/LS detected an increased risk of seroconversion among African American MSM, the repeat testers method did not. This dissimilarity may be attributed to the fact that the repeat-testers method analyzed data only from the HAP test site while the S/LS method analyzed data from both HAP and Harborview Medical Center's STD clinic. It could also arise from fundamental differences between the methods of analysis, or it may reflect undetected problems with the S/LS. The repeat testers method excludes from analysis a greater proportion of African American MSM than it does MSM of other races, which could mask an elevated risk of seroconversion among that population if indeed one exists. It is also possible that the relatively small proportion of African American MSM who tested repeatedly were less representative of African American MSM testers overall than were repeat testers from other groups. Regardless, a method of calculating seroincidence that uses data from all testers, rather limiting analysis to repeat testers, has the potential of better representing the experience of African American MSM.

As of 10/18/99, most clients at publicly-funded HIV testing sites have been asked to consent that the LS-EIA be run on their blood sample should their standard EIA results be positive. This will provide the client and his or her clinician with more information regarding the client's infection and will improve PHSKC's ability to detect trends in HIV transmission among at-risk populations. HAP is in a unique position to take advantage of the S/LS because its system of linking the records of repeat testers permits the analysis of a single test for each client during a period of study. HAP can therefore detect the proportion of testers with an indication of recent infection among all antibody-positive testers, rather than comparing tests indicating recent infection with all positive tests. That feature, combined with the strong representation of Seattle MSM among testers at HAP, will allow a unique opportunity to estimate increasingly valid measures of HIV seroincidence among Seattle MSM and other populations at risk.

❑ *Contributed by Ted White MPH, Nancy Ferrell MPH, and Gary Goldbaum MD, MPH*

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[1] Janssen RS, Satten GA, Stramer SL, Rawal BD, O'Brien TR, Weiblen BJ, Hecht FM, Jack N, Cleghorn FR, Kahn JO, Chesney MA, Busch MP. New testing strategy to detect early HIV-1 infection for use in incidence estimates and for clinical and prevention purposes. **Journal of the American Medical Association** 1998; 280:42-8.

[2] McFarland W, Kellogg T, Dilley J, Katz M. Estimation of human immunodeficiency virus (HIV) seroincidence among anonymous testers in San Francisco. **American Journal of Epidemiology** 1997; 662-664.

HIV/AIDS program
Public Health Seattle & King County

# HIV/AIDS Program Report: Hepatitis Services at an HIV Alternative Testing Site

Public Health-Seattle & King County (PH-SKC, formerly the Seattle-King County Department of Public Health) made specific clinical services available to persons at high risk of AIDS (and later HIV) beginning in 1983, with the establishment of an AIDS Assessment Clinic. This clinic, located in the building which housed the Seattle Police Department, initially drew few clients. When HIV counseling and testing (C/T) became available in 1985, services were briefly moved to Harborview's Sexually Transmitted Disease Clinic. In 1986 (with expansion of HIV C/T made possible with an AIDS Control Demonstration grant from the US Centers for Disease Control and Prevention, CDC), the alternative HIV testing clinic (known then as the "AIDS Prevention Project") moved to the corner of Summit and Seneca streets on Seattle's First Hill. Since then there have been two further clinic relocations: to the Blanchard & 4th Avenue PH-SKC site (from 1992 to 1997), and most recently to the 1001 Broadway Building on the corner of Madison, with clinic entrances on Spring Street, now called the "HIV/AIDS Program" or "Spring Street Clinic" (SSC).

With the burgeoning of other HIV/AIDS clinical and research activities, and the very successful delivery of HIV C/T services to tens of thousands of men who have sex with men (MSM) and injection drug users (IDU) in King County, the numbers of persons who have sought HIV C/T at the PH-SKC alternative testing site has fallen considerably in recent years, as has the number of newly identified persons with HIV (see Figure 1; data for 1999 were estimated from the first 6 months). In the last few years, PH-SKC has made efforts to better integrate separate programs for STD, HIV/AIDS, and other communicable diseases. Also, with the increasing recognition that people at high risk for HIV/AIDS are also at risk for hepatitis (MSM for hepatitis A virus [HAV] and hepatitis B virus [HBV] and IDU for HAV, HBV, and hepatitis C virus [HCV]) PH-SKC decided to expand the services at the HIV/AIDS Clinic to include risk and serologic screening for these conditions, vaccinations where possible, and referrals for persons with chronic HCV infection. In 1998 we began offering these services at the SSC, and at outreach HIV C/T settings, including the downtown needle exchange. Additional resources to augment this work and to demonstrate its feasibility have been obtained from the CDC.

This paper presents results of a simple survey of 96 MSM seen at the SSC in August of 1999 – to determine how many gay & bisexual men needed HAV and HBV vaccines, and the possible methods for the clinic to recoup the costs of vaccine coverage.

## Methods

We administered an anonymous 1-page survey to all MSM presenting for HIV C/T services, explaining that the survey was designed to help us determine how best to help MSM get screened and vaccinated against HAV and HBV. Questions asked the patient's age, whether he had previously had HAV or HBV infections and/or vaccines to protect against these two diseases (including whether he had completed the recommended number of vaccine shots – 2 for HAV, 3 for HBV). Then, we asked how likely he would be to want such vaccines if we could provide them for free, whether he had health insurance, and if so, whether he would be willing to permit us to complete forms, including his actual identity, to seek insurance reimbursement. (It is important to note that nearly three-quarters [72%] of MSM at this site register anonymously for HIV C/T; thus, to bill patients' insurance for hepatitis vaccines would require them to complete a separate registration which would document their true identity and their MSM risk for hepatitis A and B.) Finally, we asked clients whether they would be willing to pay for vaccine themselves (estimating a cost of $54

for two doses of HAV vaccine and $105 for three doses of HBV vaccine). Missing data about prior hepatitis and vaccination were interpreted to mean an absence of known exposures to these agents. Other missing data were handled as described in the results section.

## Results

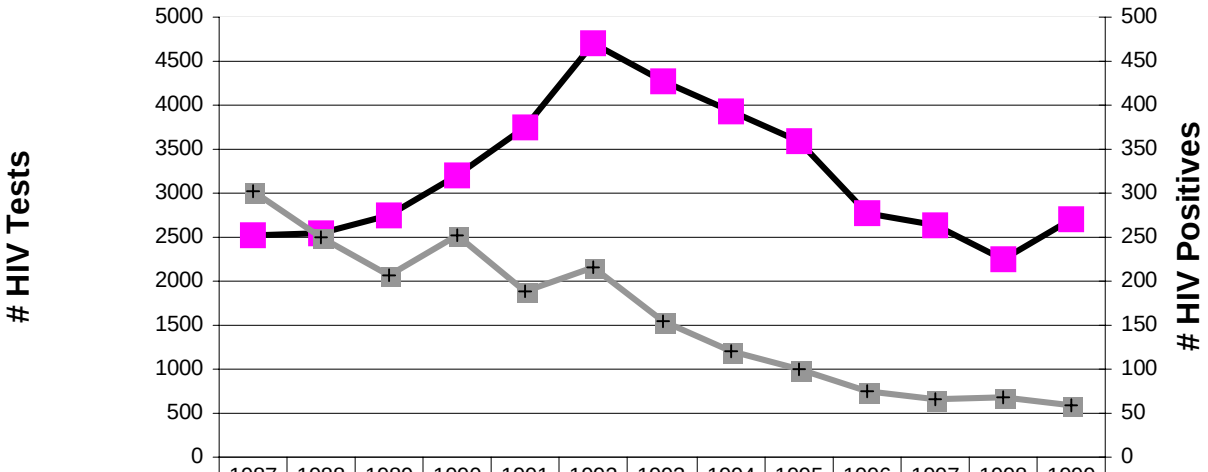
Ages of the surveyed MSM ranged between 20 and 66 (mean 33, mode 29). Of the 60 clients who indicated they'd had a specific form of hepatitis, 17% stated they'd had HAV, and 12% had had HBV. Eighteen of seventy-nine clients (23%) indicated they'd had both doses of HAV vaccine; and, 28 of 85 (33%) had had all three doses of HBV vaccine. Over three-quarters of MSM (78%) stated that they had some form of health insurance.

Excluding people who indicated previously having HAV or both doses of HAV vaccine left 50 (52%) of the 96 MSM possibly vulnerable to HAV and, similarly, 46 (48%) were possibly vulnerable to HBV and in need of vaccine. Since many cases of HAV[1] and most cases of HBV[2] occur without symptoms or signs of disease, these rates of vulnerability to HAV and HBV are likely to be higher than serologic studies would demonstrate. That is, probably higher proportions of MSM have actually already had HAV and HBV than the percentages identified in the questionnaire, so fewer would be vulnerable and in need of vaccine.

Of the 50 MSM possibly vulnerable to HAV, only 25 (50%) indicated that they were "moderately" or "for sure" interested in being vaccinated if we could offer free vaccine. If one also includes people who are "somewhat interested" in free HAV vaccine, another 17 or altogether 42 (84%) of the 50 might want to be vaccinated. Of the 46 possibly vulnerable to HBV, only 24 (52%) are at least moderately interested, and 38 (83%) are at least somewhat interested in being vaccinated – very similar figures.

Of the 25 who are at least moderately interested and may need HAV vaccine, only 9 (36%) would be willing to have us bill their insurance companies (14 [33%] of the 42 somewhat interested). For HBV vaccine these figures are 8 (33%) of 24 of the at least moderately interested and 11 (29%) of the 38 at least somewhat interested. Larger percentages indicated that they would be willing to pay for vaccines themselves: 13 (52%) of 25 of the moderately interested in HAV vaccine, and 13 (54%) of the 24 moderately interested in HBV vaccine.

**Figure 1. Number of HIV Tests & Positives by Year**




| Year | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Tests | 2532 | 2556 | 2754 | 3208 | 3749 | 4711 | 4279 | 3936 | 3589 | 2773 | 2644 | 2239 | 2714 |
| No. Pos. | 302 | 250 | 206 | 253 | 189 | 216 | 154 | 120 | 99 | 76 | 65 | 68 | 60 |

## Discussion

HBV vaccine has been available since 1981 and HAV vaccine since 1995, and both vaccines have been consistently recommended[3,4] for MSM. While a higher proportion (33% in our sample seeking HIV C/T) indicate that they have been fully vaccinated against HBV than against HAV (25%) it is, nevertheless, of great concern that both these percentages are substantially less than half, since the indications for vaccination of MSM have been widely promulgated (in the case of HBV, for nearly two decades). In this survey, no attempt was made to educate MSM about their risk for HAV and HBV before they completed the questions. That only about half of those with no known prior history of either infection or vaccine indicated more than being somewhat interested in being vaccinated – and that 1 in 6 were not even somewhat interested in free vaccine – suggests that much education is needed about the risk of MSM acquiring HAV and HBV and the importance of protecting against these diseases.

While most MSM (78%) in our survey had health insurance, few (only about 30%) were willing to complete a second, identified registration and the forms needed for insurance reimbursement (when most had come to our site for anonymous HIV C/T). More (about half) were willing to pay out of pocket rather than provide us and their insurance company with information about their identity and risk for hepatitis (and perhaps by implication, their risk for HIV).

As of October 18, 1999, most clients at publicly-funded HIV testing sites have been asked to consent that the LS-EIA be run on their blood sample should their standard EIA results be positive. This will provide the client and his or her primary infection clinician with more information regarding the client's infection. HAP's data are uniquely structured to allow us to detect the proportion of testers with an indication of recent infection among all antibody-positive testers, rather than comparing tests indicating recent infection with all positive tests. That feature, combined with the strong representationality of Seattle MSM among testers at HAP, will allow a unique opportunity to estimate increasingly valid measures of HIV seroincidence among Seattle MSM and other populations at risk.

❑ *Contributed by Bob Wood MD*

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[1]Robinson WS. Hepatitis A Virus. Chap 103 (p. 833) in Mandell, Gerald L. **Principles and Practice of Infectious Diseases**, Second Edition. Wiley Medical Publication, New York, 1985.

[2]Robinson WS. Hepatitis B Virus and the Delta Agent. Chap 135 (p. 1007) in Mandell, Gerald L. **Principles and Practice of Infectious Diseases**, Second Edition. Wiley Medical Publication, New York, 1985.

[3]CDC. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination – recommendations of the Immunization Practices Advisory Committee (ACIP). **MMWR** 1991; 40(No. RR-13).

[4]CDC. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Proactices (ACIP). **MMWR** 1996; 45 (No. RR-15).

# Pediatric AIDS Clinical Trials Unit Report

The number of newly HIV-infected infants has drastically decreased over the past several years. With the advent of Highly Active Antiretroviral Therapy (HAART), children infected with HIV are now staying healthy for a prolonged period of time. While HAART therapy is effective, the duration of the response is variable and depends on the ability of the child to tolerate the medications as well the family to adhere to the regimen. A number of current PACTU studies are looking at the effects of HAART on immune reconstitution, growth and development, side effects of therapy, and at factors impacting adherence to therapy. In addition, studies to evaluate the safety of stopping opportunistic infection prophylaxis are opening for children whose immune function has improved.

While the number of children infected with HIV perinatally is decreasing, the number of adolescents infected through adult behaviors is increasing. Strategies to manage and treat HIV infection in this population are being developed, however the challenges are many. ACTG 381 is a study to evaluate the effects of HAART on immune reconstitution and viral dynamics in this population of young persons. Treatment regimens are designed to best meet the individual needs of the adolescent, taking into account the social, emotional and developmental factors which could impact adher-

ence to treatment. The purpose of the study is to determine if, controlling for viral load at baseline, there is a positive correlation between baseline immunologic status and the virologic and immunologic response to HAART at 1,2,and 3 years after initiation of HAART.

Prevention of transmission of HIV from mothers to newborns continues to be a primary focus of the PACTU. With more licensed antiretroviral agents available, women are entering pregnancy having been on antiretroviral medications for their own health needs. Several PACTU trials are ongoing to determine how to best use these agents during pregnancy to assure both the safety of the mother and the baby. Because pregnancy alters many physiologic parameters, pharmacokinetic studies need to be done in pregnant women and newborns to determine dosing.

The Pediatric AIDS Clinical Trials Unit at Children's Hospital and Regional Medical Center and University of Washington currently has studies available for HIV-infected pregnant women and their infants, and HIV-infected children and adolescents. For more information, contact Dr. Jane Hitti or Deb Goldman, ARNP at Northwest Family Center (206)720-4300 or Dr. Ann Melvin or Kathey Mohan, ARNP at the Pediatric AIDS Clinical Trials Unit at CHRMC (206) 528-5020.

| Main Requirements | Study Drug or Topic | Study Overview |
|---|---|---|
| ***Pediatric Antiretrovirals:*** | | |
| **≥16 weeks antiretroviral therapy, ages 4 months-17 years** (Closed to accrual) | **d4T/evirapine/ritonavir vs. d4T/3TC/nelfinavir (TID) vs. d4T/nevirapine/nelfinavir (TID) vs.d4T/3TC/ nevirapine/nelfinavir** (ACTG 377) | A phase I/II randomized, multicenter protocol comparing four antiretroviral regimens containing combinations of protease inhibitors, NRTIs and an NNRTI in mildly symptomatic HIV-1-infected children aged 4 months to 17 years of age. The purpose of this study is to evaluate the ability of these regimens to delay disease progression |
| **Cohort 1: ≤ 16 years of age and able to swallow pills**<br>**Cohort 2: ≥ 3 month to ≤ 8 years (suspension)** | **DMP-266 Nelfinavir** (ACTG 382)<br>Cohort 1 accrued<br>Cohort 2 temporarily closed to accrual | Phase 1, open-label pharmacokinetic study of a new non-nucleoside reverse transcriptase inhibitor given once daily in combination with nelfinavir. Concomitant use of nucleoside reverse transcriptase inhibitors are required, but are not supplied through this protocol. |
| **Children aged 3-16 years of age and able to swallow capsules. Must be naïve to at least one of the following: stavudine, zidovudine, or ddI** | **Saquinavir soft-gel plus 2 NRTI's of choice Vs. Saquinavir soft-gel plus nelfinavir plus one or two NRTI's of choice** (ACTG 397) (Closed to accrual pending amendment) | This is a phase I study to evaluate the safety and tolerance of 2 saquinavir soft-gel containing treatment arms. Children must have a viral load >10,000 at entry to be eligible. Intensive pharmacokinetics will be obtained from a subset of children randomizing to the saquinavir soft-gel plus nelfinavir arm of the study. Because saquinavir soft gel is not available as a liquid formulation, children must be able to swallow capsules. |
| ***Perinatal Treatment Studies:*** | | |
| **Pregnant woman unable to tolerate zidovudine or choosing not to take zidovudine** | **Stavudine (d4T)** (ACTG 332) | This is a phase 1 pharmacokinetic study of stavudine given to pregnant women during pregnancy, labor and delivery and to their newborns for 6 weeks. Newborns will either receive stavudine or zidovudine. The objective is to define the appropriate stavudine dose for the pregnant woman and obtain ascertain the safety of stavudine for both the pregnant woman and newborn. |
| **Pregnant HIV-infected women who have not received nevirapine** | **Nevirapine** (ACTG 316) | Pregnant women infected with HIV and who are naïve to nevirapine are eligible for this study. During labor and delivery women will be given a single dose of nevirapine or placebo. Newborn infants will receive a single dose of nevirapine or placebo (same as mother) between 48-72 hours of life. Women may continue zidovudine or other antiretroviral medications, except nevirapine, through pregnancy. The goal of the study is to determine if nevirapine administered at the time of delivery and to the newborn will further decrease maternal-infant HIV transmission. |
| **Pregnant HIV-infected women** | **Saquinavir-SGC, lamivudine, zidovudine** (ACTG 386) | This is a Phase I study of the safety and correct dose of saquinavir-SGC given in combination with zidovudine and lamivudine during pregnancy and labor and delivery. Women may begin therapy at 13 weeks gestation and continue until 6 weeks postpartum. |

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| **Newborn infants born to HIV-infected pregnant women** | **Increased calorie formula** (ACTG 247) | This is a randomized, double-blind, controlled study of an increased caloric density formula and its effect on growth and nutritional status of HIV-infected children. All infants born to HIV-infected women are eligible for enrollment, however infants found to be uninfected will be discontinued from the study. |
| **Newborn infants born to HIV-infected pregnant women** | **GP 120 vaccine** (Study to re-open to accrual with amendment) | This Phase I study of the safety and immunogenicity of ALVA-MN120TMG vaccine given to infants within 72 hours of birth. Infants receive additional vaccinations at 4,8, and 12 weeks of life; 18 infants receive vaccine, 6 receive placebo. |
| ***Opportunistic Infections:*** | | |
| **HIV infected children and adolescents ≥2 years ≤21 years with CD4 % as follows: >2 and <6 years CD4% >25% >6 and <21years CD4% >20** | **No study drugs. Purpose to stop prophylaxis** (P1008) | This is a study to evaluate the safety of stopping PCP and MAC prophylaxis in children whose CD4% has increased following institution of effective antiretroviral therapy. It is an observational study of the rate of opportunistic events in children who have discontinued prophylactic medications. |
| ***Natural History Studies:*** | | |
| **HIV-infected, severely immunocompromised (CD4% < 10%)children aged 4-17 years initiating open-label HAART therapy.** | **Effects of HAART on immune reconstitution** (P1006) | P1006 is a study designed to measure how well the immune system recovers once aggressive antiretroviral medications are started. No antiretroviral medications will be provided as part of this study. Children will receive hepatitis A and tetanus vaccines as part of the study; response to these vaccines will be used as a measure of immune function. |
| **HIV-negative, non-exposed, normal children aged 0-18 years** | **Purpose is to obtain normal ranges of lymphocyte subsets in children.** (P1009) | P 1009 is an observational, cross-sectional study to obtain the normal range of lymphocyte subsets in children. Study involves a one time blood draw from children undergoing elective surgeries or having blood taken for other non-illness associated purposes. |
| **HIV-infected young persons, >8years up to 22 years of age, who did acquire infection perinatally** | **Effects of HAART on immune reconstitution and viral dynamics.** (ACTG 381) | Non-randomized, observational study to define the immune reconstitution that occurs following institution of HAART in the recently infected adolescent. The study objective is to determine if, controlling for viral load at baseline, there is a positive correlation between baseline immunologic status and the virologic and immunologic response to HAART at 1,2,and 3 years after initiation. |
| **Infants of women who were enrolled in treatment trials during pregnancy; infants and children enrolled in ACTG treatment or vaccine trials** | **Observational study to look for long term outcomes** (ACTG 219) | Open to all infants and children currently or previously participating in HIV treatment protocols, including infants born to women who participated in a trial during pregnancy. The objective is to determine late effects of HIV therapies and HIV infection in children. |
| ***Pending Perinatal Treatment Studies:*** | | |
| **Pregnant HIV-infected women** | **Nelfinavir, lamivudine, zidovudine** (ACTG 253) | This is Phase I study of the safety, tolerance and pharmacokinetics of nelfinavir given with zidovudine and lamivudine to HIV-1 infected women and their newborns. Women may have had prior nelfinavir therapy. Women are enrolled between 14-32 weeks gestation. |
| ***Pending Pediatric Antiretrovirals:*** | | |
| **Heavily pre-treated HIV-infected children aged 7-22 years** | **Stavudine, didanosine, lamivudine, nevirapine, saquinavir-sgc, nelfinavir, ritonavir, hydroxyurea** | This is a Phase I, proof of concept trial to evaluate the safety and tolerance of a multidrug therapy administered at higher than standard doses for children with progressive HIV disease. |

❑ *Contributed by Kathey Mohan ARNP*

# AIDS Vaccine Evaluation Unit Report: New Protocols this Quarter

The AVEU enrolled 11 volunteers in Protocol 032, a Phase I trial introducing a new recombinant p24 subunit vaccine as a novel boost compared to or in combination with a gp120 subunit vaccine, given in a prime-boost regimen with a canarypox HIV vaccine, ALVAC vCP 205. This is an 18 month study involving 64 people nationwide.

We also anticipate enrolling a similar number in Protocol 034A, which will reevaluate the performance of the canarypox HIV vaccine ALVAC vCP 205 compared to a newer generation canarypox vaccine, ALVAC vCP 1452, as measured by vaccine-induced HIV-specific CTL responses. ALVAC vCP 205 has been tested in over 500 volunteers previously. ALVAC vCP1452 was previously tested in 35 volunteers in Protocol 034, along with a gp160 subunit boost adjuvanted with PCPP. Protocol 034A is a twelve-month Phase I trial involving 60 subjects nationwide.

Other protocols may open before year's end. A "Memory" protocol is planned which would give former volunteers from several protocols who received pox-virus based experimental HIV vaccines a boost with ALVAC vCP205, to test for sustained immunological memory and tolerability of a booster dose.

The AVEU has enrolled over 700 normal healthy volunteers in the greater Seattle area in Phase I and II safety and immunogenicity studies of experimental HIV vaccines, and screened over 1600 people. Tasks for the future will be to provide greater outreach to increase the diversity of our volunteer pool, to provide increased community education about the vaccine effort, and to prepare the community for large scale vaccine trials. We hope to partner in this effort with our neighbors at UW HIVNET, local AIDS service organizations and HIV prevention groups.

With the Year 2000, the leadership of the HIV Vaccine Trials Network will be centered squarely in Seattle. We look forward to local scientific leadership in the areas of virology, immunology, behavioral intervention, STD epidemiology, and biostatistics taking on greater prominence in the international vaccine effort and working with the community to move trials forward.

As always, we seek volunteers for our vaccine studies, who are 18-50 years of age, HIV-negative, healthy, and living in this area for 18-24 months. The Community Advisory Board is another way to help—volunteers meet monthly to represent community interests in HIV vaccine trials. For more information about volunteer opportunities, please call (206) 667-2376.

❑ *Contributed by Marnie Elizaga MD*

## AIDS Vaccine Evaluation Unit

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**Volunteers Needed**
Must be 18-60 years of age, healthy, HIV-negative, and available for 18 months to two years.
Please call (206)667-2300 for more information.